# Scenic Beauty Estimation Database

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by,

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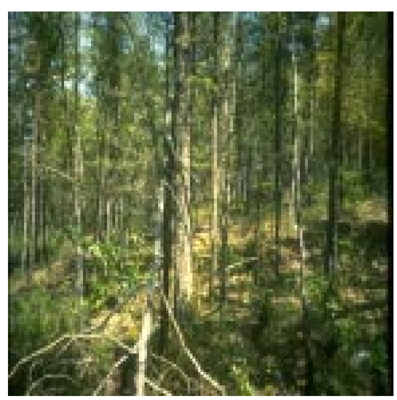

## EXECUTIVE SUMMARY

The United States Forest Service (USFS) as part of its ongoing mission to manage forest land is conducting an extensive study to understand various factors related to the preservation of the scenic quality of forestry images. ISIP, in conjunction with the Southern Research Station (SRS), has prepared a database consisting of 700 images to support the development of algorithms that will automatically estimate scenic quality. The images included in this database were drawn from a study spanning four years dealing with the Ouachita National Forest in Arkansas, U.S. Photographs taken under controlled conditions have been digitized using an extremely high quality scanning process, and converted into computer readable data.

What makes this particular database interesting is that, in addition to the raw data, there are a number of measures computed by having human subjects manually assess the images. For example, subjective scenic beauty ratings on all images are available as part of the database. Hence, this database can serve as a useful tool for the development of new algorithms. In fact, an automated tool that evaluates an algorithm by comparing its output to the reference data has been developed to facilitate the use of this database.

The areas studied were partitioned into four blocks, with each block being further subdivided into five plots. The database includes images taken of each plot during each of the four seasons in the year. In addition, the blocks were photographed in 1990-91 and again in 1994-95. Each plot was photographed from at least four different angles. There are 20 plots included in this study, so the number of images in the database is 4 blocks x 5 plots x 4 seasons x 4 angles x 2 years = 640. In addition, for some plots, more than four angles were used. There are 40 images corresponding to various baseline conditions, and there are 20 warm-up slides, bringing the total number of images to 700. An overview of the size and content of the database is given below:

| Block / Plot | Num. Images | Block / Plot | Num. Images | Block / Plot | Num. Images |
|---|---|---|---|---|---|
| b01: | 174 (total) | b02: | 168 (total) | b03: | 168 (total) |
| p001 | 32 | p005 | 40 | p009 | 32 |
| p002 | 31 | p006 | 32 | p010 | 31 |
| p003 | 40 | p007 | 32 | p011 | 32 |
| p004 | 39 | p008 | 32 | p012 | 32 |
| p020 | 32 | p019 | 32 | p018 | 40 |
| b04: | 168 (total) | errata: | 13 (total) | errata: | 10 (total) |
| p013 | 32 | cd_0102 | 1 | cd_0671 | 6 |
| p014 | 32 | cd_0122 | 1 | cd_0673 | 4 |
| p015 | 40 | cd_0172 | 1 | | |
| p016 | 32 | cd_0173 | 9 | | |
| p017 | 32 | cd_0174 | 1 | | |

All images are stored in a portable pixel map (ppm) format at a resolution of 1536 x 1024 pixels using an RGB representation with 8 bits of resolution per color. In addition, results of the subjective assessments, which USFS SRS maintains in a spreadsheet database, have been included in comment fields in the ppm files, so that images can be easily cross-referenced. See *http://www.isip.msstate.edu/resources/technology/projects/1997/sbe_imaging* for more details.

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## 1. ABSTRACT

The aesthetic quality of forests in the U.S. is actively managed by the United States Department of Agriculture (USDA) Forest Service. To support this mission, several forest lands in the southern U.S. have been carefully photographed and analyzed for factors contributing to scenic content. In this document, we describe a database of 700 images that has been developed to facilitate the development and testing of algorithms that automatically analyze these images for scenic content. These images were drawn from a study spanning four years dealing with the Ouachita Forest in Arkansas, U.S. Photographs taken under controlled conditions have been digitized using an extremely high quality scanning process, and converted into computer readable data using a portable pixel map format. In addition to the raw images, numerous subjective assessments of the data have been incorporated into the image files, making the overall database extremely useful for the evaluation and characterization of new algorithms.

## 2. HISTORICAL BACKGROUND

The U.S Forest Service is working to assure that national forests such as the Ouachita are managed for timber, as well as for wildlife, water quality and recreation [1]. To adequately plan for recreation, public land managers need data describing the characteristics and preferences of recreating visitors. Similarly, there has been loss of aesthetics caused by disturbances such as foresting and heavy recreational use. Maintaining and enhancing the visual quality of forests is becoming increasingly important as competing uses for forest land intensify.

The Winona study area [2] was established during the 1988-89 dormant season as a “pre-phase I” plot-level component of the Ouachita ecosystem management research program. The plots are installed on the Winona Ranger District and consist primarily of second-growth shortleaf pine with a hardwood component dominated by white oak and lesser amounts of post oak, black oak, blackjack oak and southern red oak. Each plot consists of a 0.2 hectare division within a 0.65 hectare treated area. They are oriented along the east-west ridge with elevations ranging from 195 to 240 meters above sea level. In aggregate they represent four replications of four treatments, plus four control plots that were not treated.

The purpose of the study was to perceive the visual quality of different timber harvesting regimes [3] and how these different types of timber harvests affect not only the recreational experience on national forests but also loggers who harvest timber. Systematic approaches to the assessment of landscape scenic beauty have only been developed in the past 25 years. These studies were initiated in an effort to identify predictors of public response to different forest landscapes. The findings suggest that various physical features of a forest, such as tree size, understory screening and ground condition affect its perceived scenic quality. Also, seasons play a major role in the scenic quality of a forest image.

The database we have developed is based on two sets of images taken approximately four years apart. The database is divided into two sessions. The first session consists of photographs taken during 1990-91. The second session consists of photographs on the same areas taken four years later (1994-95). The images included in this database were drawn from a study spanning four years dealing with the Ouachita Forest in Arkansas. Photographs taken under controlled conditions have been digitized using an extremely high quality scanning process, and converted into computer readable data.

The areas studied were partitioned into four blocks, with each block being further subdivided into five plots. The blocks are identified as Northern - aspect lower - slope region (b01), Northern - aspect middle - slope region (b02), Northern - aspect upper - slope region (b03), and Southern - aspect upper - slope region (b04). The database includes images taken of each plot during each of the four seasons in the year. In addition, the blocks were photographed in 1990-91 and again in 1994-95. Each plot was photographed from at least four different angles. There are 20 plots included in this study, so the number of images in the database is 4 blocks x 5 plots x 4 seasons x 4 angles x 2 years = 640.

In addition, there are 40 images regarded as baseline images (20 images from the 1990-91 data and 20 images from 1994-95 data). These can be identified in the database by examining information in the image files. There are also 20 images denoted as warm-up slides. These were used to calibrate human performance during subjective testing. At this time, we don't have any detailed information that cross-references these images to specific plots and blocks. Therefore, these images are stored separately from the database. Finally, there were two anomalous slides that were excluded from the database due to insufficient data.

Hence, the original 700 images that we received were partitioned into a set of 677 images used for development, 20 warm-up slides held out from the database proper, and three anomalous slides that suffered from incomplete documentation. We now describe the nature of the data in more detail.

## 2.1. Experimental Conditions

The 20 plots used in this study (4 blocks partitioned into 5 plots each) were photographed two growing seasons after certain treatments were imposed [4]. Photo sampling took place during each season of the year beginning in the summer and ending in the spring. In the present database four blocks were considered with five plots in each block. The pine basal area was reduced to 60 $ft^2$/acre in all treated stands. The five treatments used are described below in Table 1.

| treatment | Explanation |
|---|---|
| t00 | control plots or complete hardwood control |
| t01 | 60 sq ft./a scattered hardwood |
| t02 | 75 sq ft./a clustered hardwood |
| t03 | 75 sq ft./a scattered hardwood |
| t04 | 90 sq ft./a scattered hardwood |

Table 1. A description of the treatment categories in the USFS image database.

Because landform position can affect moisture availability and forest regeneration, the plots were blocked so that each treatment and control is replicated on four landform positions: a gentle-slope north-facing position, a moderate-slope north facing position, a ridgetop north-facing position, and a ridgetop south-facing position.

Each view was selected by sampling along a 30 degree arc extending outward from the edge of the plot to a maximum distance of 50 feet. Visual attributes were divided into visual penetration, foliage and twig screening, tree-bole screening, and nonvegetative screening. Tree-bole screening is defined as the occupancy of tree trunks at least 5 inches in diameter at breast height (d.b.h, e.g. 4.5 ft.). Foliage and twig screening is vegetative screening performed by considering tree trunks less than 5 inches d.b.h and all foliage and twigs. Nonvegetative screening includes rocks, baresoil, and litter. Visual penetration is the absence of the other three components. Limited screening by foliage and twigs, abundant visual penetration and a high density of tree-bole screening is typically highly correlated with a high scenic beauty rating in loblolly shortleaf pine stands. A scaling device called a screenometer was used to estimate the proportion of visual attributes.

### 2.2. Photo CDs

The original images were delivered in a proprietary format developed by Kodak known as the PhotoCD format [5]. PhotoCD is a file format that is created by Kodak specifically for archiving high-quality photographs. The most common media for PhotoCD (PCD) images is a CD-ROM disk. PhotoCD has specific fixed resolutions. There is the original high resolution file (which in our case is approximately 6 Mbytes per image), a 2x version which is the half the resolution of the highest resolution, and similar 4x and 16x versions. PhotoCDs, while an impressive format for doing high quality image processing, is virtually useless as a research format, because Kodak is exerting extreme pressure to prevent its proliferation as a publicly available standard. Hence, our first order of business was to acquire and convert the PhotoCDs to a publicly accessible image format, so that subsequent software development could build on the vast amount of Unix software currently available in the public domain.

## 3. PREPARATION

We selected a Portable Pixel Map (PPM) format as the format to be used for archival of the data. Further, we settled on the 4x PhotoCD resolution, which generates images in a 1536 pixel wide by 1024 pixels high format. Each image in this resolution requires about 5 Mbytes of disk space. In addition to the image data, information about the images prepared by USFS was added to the files, making this database ideal for supporting research into image analysis. The details of this conversion process are given below.

### 3.1. The PPM Representation

Two of the most common image formats in use on Unix computers today are GIF [5] and PPM [5]. Both are supported by a wide range of shareware tools including xv, our primary image display tool [6]. The GIF format is a compressed format based on the MPEG1 compression standard. While it delivers impressive compression ratios, it is a lossy compression format, and is difficult to access directly via C programs (function-level interfaces are not highly standardized).

Hence, to facilitate the development of research-oriented software, we selected the PPM format instead due to its simplicity and lossless compression capability. A number of tools are available that easily convert between the two formats, including xv.

The Portable Pixel Map (PPM) format is a lowest common denominator amongst color image file formats. A PPM file consists of a small header followed by the image data. The format of the PPM header is described below:

- magic number: a unique string identifying the file type. In our case, the key is “P6” indicating that the image is an RGB three byte per pixel format. The magic number must be the first line in the PPM file.
- width height: the width and height of the image in pixels (1536 x 1024 in our case);
- max_colors: the maximum color value of a pixel (255 in our case);

In addition to these required values, comments are allowed. Any line preceded by a “#” is regarded as a comment and ignored. This is an extremely attractive feature of the PPM format, because it allows auxiliary information, such as that described below, to be included in the files. In the USFS database, a calendar year is divided into the following seasons:

| Month | Season |
|---|---|
| Jan, Feb, Mar | Winter |
| Apr, May, Jun | Spring |
| Jul, Aug, Sep | Summer |
| Oct, Nov, Dec | Fall |

Table 2. In the USFS database, a year is divided into four seasons.

The image data follows the header in a row-oriented format — pixels are written as binary data starting with the first pixel of the first row, the second pixel of the first row, and continuing in a similar manner for the second row through row number 1024. In a P6 formatted image, each pixel is represented as a sequence of three bytes. The first byte corresponds to the value of the color red encoded on a linear scale of 0 to max_colors (255 in our case). The second and third bytes represent the values for the green and blue colors respectively. Hence, the nominal size of an image file is 1536 pixels x 1024 pixels x 3 bytes, or 4.7 Mbytes.

### 3.2. Additional Image Information

One of the most valuable features of this database is the inclusion of a significant amount of auxiliary information about each image collected by the USFS [7]. This information provides baseline measurements needed to fuel research into various statistically-based methods for automated analysis of the data [8]. This data available for each image includes the original photographic tray and slide number, a human subjective judgement (scored on a scale of 1 to 10), a Scenic Beauty Rating (SBE), Normalized Scenic Beauty Rating (SBEZ), block number, treatment, plot number, date, angle and other miscellaneous information such as Boles, Utwigs, Uopen, Rocks, Ltwigs, Lopen. The final entry is the time of day at which the picture was taken. This information is maintained by the USFS in a PC-based spreadsheet database. An ASCII representation of the spreadsheet entry for each image was included as a header item in the PPM file. A typical PPM header is shown below in Figure 1.

Note that we have also encoded the number of the PCD and the filename on the PCD into the header (in Figure 1, the second line contains an entry delimited by “file:”, followed by cd_0109 and img0010.ppm). This is obviously useful when attempting to cross-reference the PPM files to their source. In fact, since we had some difficulty collating the original photographic slides with their electronic copies on the PCD version of the database, this information is extremely valuable for recovering the image information.

As noted previously, some of the images in the database carry special significance, and are designated as either baseline or warm-up slides. Identification of these image files required several iterations. In Table 3, we provide the critical information required to match these images with their corresponding photographic slides. The PCDs and their corresponding tray numbers for these images are given in this table for the data from 1990-91.

Note that only PCD# 0671 contains images corresponding to the baseline slides for this dataset. For all other PCDs, every fifth slide from each tray are skipped and appear as the baseline slides on PCD# 0671. Hence the 100 slides on trays 2-4 comprise only 80 images on the corresponding PCDs. A similar overview of the PCD inventory for the year 1994-95 is given in Table 4.

| PCD # | # images | Slide Numbers | Tray Numbers |
|---|---|---|---|
| 0671 | 106 | 1 - 106 | Tray 1 includes Baseline Slides |
| 0673 | 4 | 107 - 110 | Tray 1 |
| 2134 | 80 | Reverse 100 - 1 | Tray 2: every 5$^{th}$ slide blank |
| 0122 | 80 | 1 - 100 | Tray 3: every 5$^{th}$ slide blank |
| 0109 | 80 | 1 - 100 | Tray 4: every 5$^{th}$ slide blank |

Table 3. A listing of the number of images in each PCD and the corresponding photographic trays for the year 1990-1991.

```
P6
# file: cd_0109/img0010.ppm
# spreadsheet: 4 12 7.07 41.22 100.560 1 3 SPRING 1 N 91 APR 09 225 0 3 6 0 0 9 0 0 13:14
1536 1024
255
(... image data follows as binary data...)
```

Figure 1. An example of a typical PPM header, demonstrating the method by which auxiliary information was stored in the PPM image file (this particular header corresponds to image file $USFS/data/win/c0000/s00/b01/p001/win_c0000_s00_b01_t03_p001_a225_040991.ppm).

| PCD # | # images | Slide Numbers | Tray Numbers |
|---|---|---|---|
| 0173 | 108 | 1 - 108 | Tray 1 includes baseline slides |
| 0172 | 1 | 109 | Tray 1 |
| 0174 | 1 | 110 | Tray 1 |
| 0102 | 80 | 1 - 100 | Tray 2: every 5th slide blank |
| 2158 | 80 | 1 - 100 | Tray 3: every 5th slide blank |
| 1503 | 80 | 1 - 100 | Tray 4: every 5th slide blank |

Table 4. A listing of the number of images in each PCD and the corresponding photographic trays for the year 1994-1995.

## 4. SOFTWARE TOOLS

Before we enumerate the database files in detail, we briefly describe a few of the software tools available to automate the task of database preparation. These consist of a shareware program to convert PCD to PPM images that has reverse-engineered the PCD format, a shellscript wrapper that processes lists of files, the PPM and xv shareware tools, and a couple of diagnostic programs that manipulate ppm image files. Since the PPM format is widely used, there are numerous shareware software environments that process this format. We have chosen a set of tools that are easy to maintain, and provide the most straightforward interfaces. All of these tools reside in the directory $USFS/bin — the repository for all software tools.

### 4.1. PCD to PPM Conversion

The most effective PCD to PPM converter we could find for a Unix machine was version 0.6 of pcdtoppm [9]. This software also needs some netpbm utilities which are also available as public domain utilities. This is an easy program to build and use. It is configured to build automatically using the gcc complier — just type “make” and it will build. It is typically invoked with the command line “hpcdtoppm -4 foo.pcd foo.ppm”, where the option “-4” denotes the 4x resolution output, “foo.pcd” is the input pcd file, and “foo.ppm” is the ppm output file.

A shellscript was written to support batch processing using hpcdtoppm. This script, named pcd_to_ppm, recurses through the command line arguments and processes all files sequentially through hpcdtoppm. Hence, converting the database from pcd to ppm is as simple as enumerating all the database files on the command line using wildcard characters: “pcd_to_ppm */*/*.ppm”. A ppm file with an extension “.ppm” will be created for each pcd file.

### 4.2. PPM Manipulation

The results of this conversion can be easily viewed using the shareware program xv [6]. The command line “xv file.ppm” can be used to view a file, or the tool’s internal directory lister can be used to traverse directories and search for files to view.

Many of the tools that manipulate ppm images are based on a shareware library known as pbmplus [10]. This collection of software allows you to manipulate images of various formats using a variety of tools, and also provides a common programming interface via a collection of C function calls. Pbm is very popular for those who need machine-portable programming-level interfaces to many images formats and image processing utilities.

In addition to these utilities, a C++ interface to a PPM file was developed as a standard I/O module for research software being developed to do automated scenic beauty estimation. Two useful derivatives of this class are the utilities ppm_print and ppm_diff utilities. Ppm_print prints the pixel values of an n x m pixel sub-image to stdout (the terminal). Ppm_diff computes a pixel by pixel difference between two images, and writes it to a third PPM file. These diagnostic tools are useful for investigating various properties of the images.

### 4.3. Verification

Since the auxiliary header information is stored as ASCII data, it is a straightforward task to write some simple shell-level commands to verify and manipulate the header information. We have used a combination of head, grep, sort, and uniq to verify the contents of the database. In addition, using such tools, we have generated standard subsets of the database that correspond to interesting cross-sections of the database, such as a listing of all baseline images. The PPM format is particularly compatible with the general Unix philosophy of manipulation data via pipes of various standard Unix utilities. This is another important reason why it is preferred over a binary-encoded format such as PCD.

## 5. DATABASE DESCRIPTION

There are at present a total of 700 images in the database. These can be loosely grouped into three categories: valid data, warm-up slides, and errata (anomalous images). An overview of the size and content of the database is given below in Table 5:

| Block / Plot | Num. Images | Block / Plot | Num. Images | Block / Plot | Num. Images |
|---|---|---|---|---|---|
| b01: | 174 (total) | b02: | 168 (total) | b03: | 168 (total) |
| p001 | 32 | p005 | 40 | p009 | 32 |
| p002 | 31 | p006 | 32 | p010 | 31 |
| p003 | 40 | p007 | 32 | p011 | 32 |
| p00‘4 | 39 | p008 | 32 | p012 | 32 |
| p020 | 32 | p019 | 32 | p018 | 40 |
| b04: | 168 (total) | errata: | 13 (total) | errata: | 10 (total) |
| p013 | 32 | cd_0102 | 1 | cd_0671 | 6 |
| p014 | 32 | cd_0122 | 1 | cd_0673 | 4 |
| p015 | 40 | cd_0172 | 1 | | |
| p016 | 32 | cd_0173 | 9 | | |
| p017 | 32 | cd_0174 | 1 | | |

Table 5. A summary of the USFS Scenic Beauty Estimation database.

The data is organized by block and plot. Images in errata are listed by their CD number.

## 5.1. Overview

From the 700 images, 677 images were retained as the images available for algorithm research and development. An additional 23 images are documented in Section 5.2 as errata. The root node for the database is $USFS, where $USFS can point to any path on the host machine. Under $USFS, the following directories can be viewed:

| Directory | Function |
|---|---|
| AAREADME.text | ASCII description of the directory structure |
| bin | utility programs |
| class | C++ source code for algorithms and tools |
| data | USFS SCENIC BEAUTY DATABASE |
| doc | documentation |
| exp | experiments on this database |
| include | C++ header files |
| lib | libraries for software development |
| util | source code for the utilities |

Table 6. A summary of the directory structure at the root node of the database.

The database resides in the directory named *data*. The directory tree underneath */data* has been created in such a way that it mirrors the USFS scheme for documenting forest plots. We have attempted to keep it general so that future data can be accommodated in the same format. The current tree consists of the forest range, compartment number, stand number, block number and the plot number. For example, the full pathname for one image in the database is given by "$USFS/data/pre_phase_01/win/c0000/s00/b01/p001/win_c0000_s00_b01_t03_p001_a225_040991.ppm." The pathname is explained below in Table 7.

| Directory | Function |
|---|---|
| $USFS/data | root node |
| /pre_phase_01 | version |
| /win | forest range (Winona) |
| c0000/ | compartment (0000 denotes none) |
| s00/ | stand (number 00) |
| b01/ | block (number 01) |
| p001/ | plot (number 001) |

Table 7. An explanation of the directory tree for the USFS database.

Note that there is some redundancy in this scheme — not all fields will be used all of the time.

More important, however, is that we believe this type of organizational structure can be used for many USFS applications. Since the images in the current database don't use the compartment and stand number, they have been assigned by default the value of zero. The block field generally consists of four values (b01-b04). Plot number vary from p000 t0 p020.

Each filename in each directory is also redundantly encoded with this same information. An explanation of the filename convention is given in Table 8. Maintaining unique filenames is extremely important to insure the long-term organization of the database.

| Substring | Function |
|---|---|
| win_ | forest range (Winona) |
| c0000_ | compartment (0000 denotes none) |
| s00_ | stand (number 00) |
| b01_ | block (number 01) |
| t03_ | treatment (number 03) |
| p001_ | plot (number 001) |
| a225_ | angle (225°) |
| 040991 | date (April 9, 1991) |
| .ppm | PPM file extension |

Table 8. An explanation of the filenaming convention for a typical file in the USFS database is given. The filename for this particular example is win_c0000_s00_b01_t03_p001_a225_040991.ppm.

Though our filenames are lengthy, such a convention makes manipulation of the database easy. A complete listing of the database is given in Appendix C.

## 5.2. Errata

There are two subsets of the database that are of interest to users. First, there is the errata directory which contains the "warm-up" slides. There are 20 images for whom the auxiliary information is not available. These are slides used to condition human subjects during subjective testing [2]. Ten of these slides came from the 1990-1991 period, and the other ten came from 1994-1995. These are listed in the second table in Appendix C.

Also, the first and twenty-second files on the errata list in Appendix C are anomalous files. The image on the slide does not appear to match the auxiliary information supplied for the files. After consultation with USFS, it was decided to discard these files. The twenty-third image was of improper size (1024 x 683 pixels) compared to the other images (1536 x 1024 pixels). Hence, 23 of the 700 original images are not included in the database proper.

The first table in Appendix C lists the files constituting the baseline slides for the plots represented in this study. They can be treated as valid images, and hence are included in the database proper. However, for some algorithmic development, these files will be useful as training material. These can also be readily identified from the auxiliary information in the PPM header by examining the 10 item in the spreadsheet entry: “Y” implies it is a baseline slide.

## 6. ANALYSIS

The primary reason for assembling this database is to develop and evaluate algorithms that can automatically estimate the scenic beauty rating of an image. Hence, the most vital piece of information in the database are the Scenic Beauty Estimates (SBEs) derived from human subjective testing experiments [4]. SBEs give us a general idea of the visual preferences of the human beings — an important input into the forest management process. Since such measures must be computed from human judgements, a fair amount of statistical normalization must be performed to generate these scores. In this section, we review several procedures used to generate the SBEs contained in this database.

### 6.1. Scenic Beauty Rating

Rating scales offer an efficient and widely used means of recording judgements about many kinds of images. However, as with all subjective evaluations, the rating scales used by humans vary widely from subject to subject. Hence, these measurements must be statistically normalized before they can be directly combined. The scaling procedure used to generate SBEs from human judgements relied on a computer program called RMRATE [11]. RMRATE is designed to

- scale rating data using a number of scaling procedures;
- compare the scale values obtained by use of these procedures;
- evaluate the assumptions of the scaling procedures;
- determine the reliability of the ratings;
- evaluate individual variations among raters.

Rating response scales are typically used in one of two ways. With the first approach, each value of the rating scale can carry a specific descriptor. This procedure is often used in attitude assessment. For example, the values of a 5-point scale could be specified as completely agree, tend to agree, indifferent, tend to disagree, and completely disagree, where the observer is to indicate degree of agreement about a set of statements. The observer chooses the number of the response that most closely represents his/her attitude about each statement.

The second approach is the one which is most commonly used with environmental stimuli. For example, a 10 point rating scale might be used, with a “1” on the scale indicating “very low preference” for the stimulus, and a “10” indicating “very high preference.” Ratings between 1 and 10 are to indicate levels of preference between the two extremes. The end points are specified to indicate the direction of the scale e.g low ratings for less preference, high ratings for more preference. The latter approach was used in the subjective tests previously described.

It is often necessary to combine the ratings for a set of stimuli obtained in one rating session with ratings for another set of stimuli obtained in a different rating session. This need may occur, for example, when ratings are needed for a large group of stimuli that cannot all be rated in the same session. In such cases, the set of stimuli can be divided into smaller sets to be rated in multiple sessions. In such cases, a standard approach is to divide the set of stimuli into smaller sets to be rated by different observer groups, or by the same group in separate sessions. In either case, it is important that some stimuli are common to the separate groups which provides a basis for determining the comparability of the ratings obtained from the different groups and possibly a vehicle to “bridge the gap” between different groups. The subset of stimuli common to all rating sessions is called the baseline.

The baseline stimuli are used to determine comparability between two or more rating sessions. It is important that the baseline stimuli are rated under the same circumstances in each case. Otherwise, the ratings may be influenced by other unwanted factors such as interactions between the baseline stimuli and the other stimuli that are unique to each session. One such measure, known as the Scenic Beauty Estimate (SBE), was produced by applying the techniques described above to the results of the human evaluation [8].

In this procedure, a mean Z for each stimulus is computed based on the distribution of ratings assigned by the different observers. The cumulative proportion of observers judging the stimulus to be at or above each rating category is transformed to Z by reference to the standard normal distribution. The Z’s are then averaged over the rating categories to yield a mean Z for each stimulus. A subset of the stimuli called a “baseline” is selected to determine the origin of the SBE scale. The overall mean Z of the baseline stimuli is subtracted from the mean Z of each stimulus, and then the difference is multiplied by 100 to yield individual stimulus SBEs.

To summarize, the computation of the SBE for a stimulus requires three steps. First the mean Z for each stimulus is computed as follows:

$$mZ_i = \frac{1}{n-1}\sum_{k=2}^{n}\Phi^{-1}(CP_{ik}) \tag{1}$$

where $mZ_i$ is the mean rating of the slide, $CP_{ik}$ is the cumulative probability of observers giving a view a rating of k or more, $n$ is the number of rating categories, and $\Phi^{-1}$ is the inverse normal integration function which translates $CP_{ik}$ to the appropriate unit normal deviate, Z. In step 2, the mean of the mean of the stimuli composing the baseline condition is computed. In the last step, the mean Z of each stimulus is adjusted by subtracting the mean Z of the baseline, and the mean Z differences are multiplied by 100 to remove decimals:

$$SBE_i = (mZ_i - mZmB) \cdot 100 \tag{2}$$

where $mZ_i$ is the mean of the i$^{th}$ slide, $mZmB$ is the mean of the baseline images, and $SBE_i$ is the resulting SBE. A slide with a positive SBE value is one that is rated as more scenic than the average baseline slide and a slide with a negative SBE value is one that was rated as less scenic than the average baseline slides. The distributions of SBEs are compared in Figure 2.

A variation of the original SBE procedure is to adjust the interval size of the SBE scale by

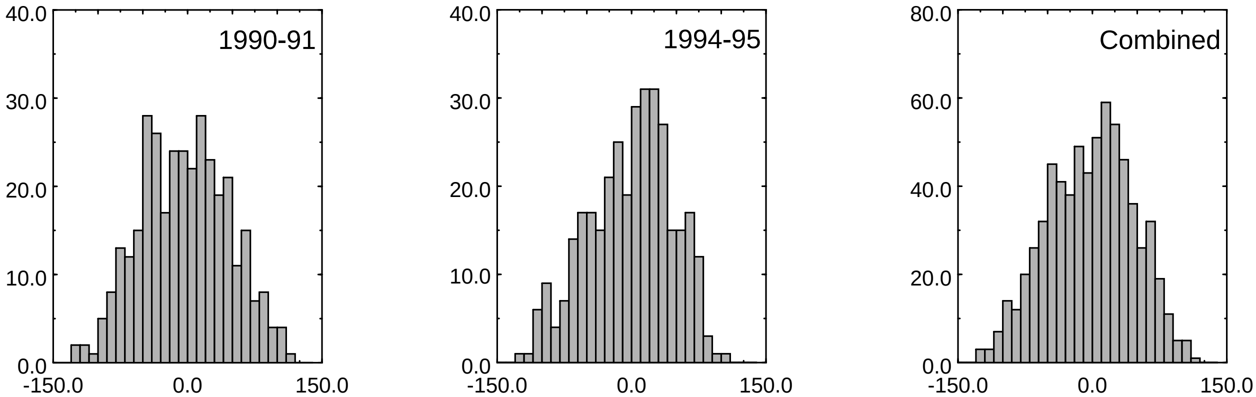


Figure 2. Histograms of the SBEs for the '90-'91 data (left), '94-'95 data (center), and combined data (right). The mean, as expected, is close to zero.

dividing the original SBE by the standard deviation of the means of the baseline stimuli, to effect a standardization of the mean:

$$SBEZ_i = (SBE_i)/(BSDMZ) \qquad (3)$$

where SBEZ is the standardized SBE, and $BSDMZ$ is the standard deviation of the means of the baseline slides. SBEZ are also included in the PPM auxiliary information.

It should be noted that in conducting the human evaluations, no attempt was made to anchor results in the '94-'95 data by including baseline stimuli from '90-'91 evaluations. When the '90-'91 baseline stimuli were used with '94-'95 images, baseline means were significantly different by 1 point when used with '90-'91 images. Such results suggests caution in assuming SBE values from the two survey periods are comparable [12]. However, we anticipate that SBE value differences by survey period are insignificant with respect to algorithm development.

## 7. PARTITIONING THE DATABASE

The database has a total of 700 images. Out of these, 40 are baseline images and 3 of the images are discarded. This leaves only 637 images which are to be classified for evaluations. In order to simplify the evaluation, the images were categorized into three classes, LSBE (Least Scenic Beauty Estimate), MSBE (Medium Scenic Beauty Estimate), and HSBE (High Scenic Beauty Estimate). The classification was done based on the mean and the standard deviation (SD) of the human subjective ratings. The mean of the subjective beauty ratings of the 637 images is -2.19 and the standard deviation is 47.46. Any image having an SBE lesser than (mean - SD) is classified as LSBE. Any image having an SBE greater than (mean + SD) is classified as HSBE and those images which had the subjective rating within the single standard deviation are classified as MSBE. With this classification, there are 110 LSBE images, 425 MSBE images and 103 HSBE images. Approximately 67% of the database is MSBE. This is depicted in Figure 3.

For evaluation purposes we have to divide the database into training and test sets. We have divided the images into four training and testing sets, with the test sets being mutually exclusive. The

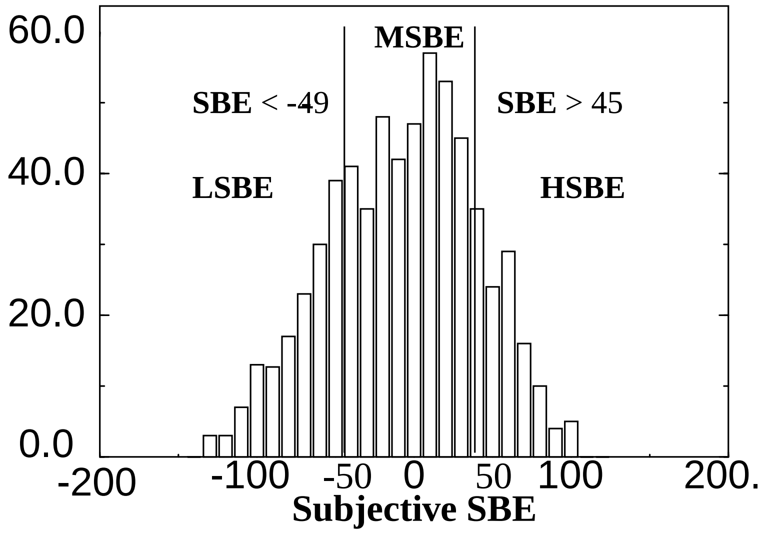


Figure 3. A distribution of SBE values for the USFS database. The images were grouped into one of three classes so that standard pattern recognition approaches could be used to classify the images.

database has images taken from five blocks with each block having 5 plots. The images are photographed over all the seasons at different angles. The criterion chosen for the partition was such as to include at least one plot from each of the block and cover all treatments and at the same time it is necessary that each test contains a similar number of LSBE, MSBE, and HSBE images.

The procedure employed involved selecting a plot from the first block, then a plot from the second block and the third block, and finally a plot from the fourth block, each of them distinctly representing a treatment. The plots p017, p018, p019 and p020 have control treatment, and each one of them were distributed in each of the test set. In this way, each of the plot was sampled only once and all the criteria were satisfied. The distribution of the plots in each of the test sets is given Table 9.

| test_set1 | test_set2 | test_set3 | test_set4 |
|---|---|---|---|
| p002 | p004 | p003 | p001 |
| p007 | p005 | p006 | p008 |
| p012 | p010 | p011 | p009 |
| p013 | p014 | p016 | p015 |
| p018 | p019 | p020 | p017 |

Table 9. A summary of the plots selected for the corresponding test sets. The test set design was an attempt to partition the database into a reasonable amount of training data, and provide a means of developing statistically significant measures of performance.

The images were selected to have equal distributions of LSBE, MSBE and HSBE images. Details of the distribution of the LSBE, MSBE and HSBE images are given in Appendix C, as well as in Table 10. Obviously, plots that appear in each test set do not appear in the corresponding training set. The baseline images were excluded from any analysis, and hence, are not included in the training or test sets.

The angles were not consistent for all the plots in the database, so there is no exact distribution of the same angles over all test sets. Also, the images were taken during two sessions, once during ‘90-’91, two years after the treatment and the other session during ‘94-’95, six years after the treatment. Each of the test sets have equal distributions of the plots from both the treatment sessions. The four test sets have images representing all categories in the database.

| Class | test_set1 | test_set2 | test_set3 | test_set4 |
|---|---|---|---|---|
| LSBE | 28 | 27 | 31 | 23 |
| MSBE | 103 | 104 | 109 | 109 |
| HSBE | 28 | 27 | 20 | 28 |

Table 10. The distribution of LSBE, MSBE, and HSBE images in the four test sets developed from the USFS image database. These distributions match the distributions in the overall database fairly well.

## 8. SPATIAL SAMPLING

In the real world, our signals of interest are continuous in amplitude and time. To process these signals using digital computers, we need to convert them into a digital form. A digital signal has discrete values in both time (a result of the sampling process) and amplitude (a result of the quantization process). Sampling is the process used to convert a signal from continuous time to discrete time. Here, the value of the signal is measured at periodic intervals in time, and each measurement is referred to as a sample.

The number of samples generated per unit time is called the sampling rate (measured in seconds) or sampling frequency (measured in Hz). To be able to fully reconstruct the original analog signal from its digital samples, the choice of sampling rate is critical. The choice of an appropriate sampling rate depends on the frequency components present in the signal. If the signal contains high frequency components, we need to sample at a correspondingly higher rate to avoid loss of information in the signal.

### 8.1. Sampling Theorem

According to Nyquist’s sampling theorem [16], the original signal can be perfectly recovered from the sampled values if the sampling frequency is greater than twice the signal bandwidth. This implies that the highest signal frequency that can be accurately represented is one-half of the sampling rate. This critical value of the sampling frequency is known as the Nyquist rate. For example, telephone-quality voice data — a one-dimensional signal — is typically bandlimited to 4000 Hz. If the sampling rate is below the Nyquist frequency, the reconstructed signal has aliasing or distortion and is different from the original signal. Since not all signals are bandlimited, in some situations aliasing is inevitable. However, anti-aliasing techniques have been developed [16] that tend to minimize the effects of such distortions.

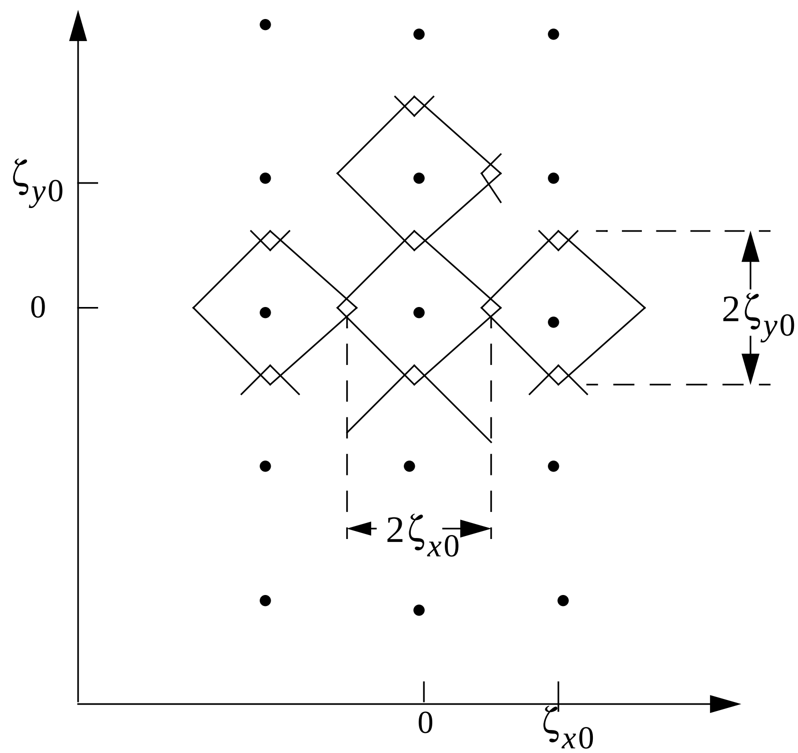


Figure 4. A graphical depiction of the spatial sampling process.

## 8.2. Two-Dimensional Sampling

In sampling a two-dimensional signal such as an image, the Nyquist rate has to be satisfied both in the horizontal $(x)$ and vertical $(y)$ directions. Sampling of images involves conversion of signal values which are usually continuous in space and intensity into discrete *pixels* (picture elements). In other words, the continuous spatial function $f(x, y)$ of the image intensity is converted into the sampled picture signal $f(m\Delta x, n\Delta y)$ which coincides with the elements of the picture matrix $f(m, n)$ at the locations $m\Delta x$, $n\Delta y$, where $m$ and $n$ refer to sample indices in the vertical and horizontal directions [17].

If the $x$ and $y$ direction sampling frequencies are greater than twice the bandwidths, i.e, if

$$\zeta_{xs} > 2\zeta_{x0} \qquad \zeta_{ys} > 2\zeta_{y0} \tag{4}$$

or if the sampling intervals are smaller than one-half of the reciprocals of the respective bandwidths, then the original image can be recovered without distortion. The lower bounds on the sampling rates —$2\zeta_{x0}$, $2\zeta_{y0}$ — are the Nyquist rates or the Nyquist frequencies in the two dimensions. $\zeta_{x0}$ and $\zeta_{y0}$ are the distances between the pixels in the $x$ and $y$ direction respectively. In two-dimensional signals such as stationary images, time is not an important concern to image measurement, as it is in the case of a one-dimensional audio signal. Rather, the number of pixels used to represent the image is intimately tied to the spatial resolution of the image, and the extent to which fine details of the image can be measured and reconstructed. Such things can be analyzed in the frequency domain in a manner completely analogous to one-dimensional signals.

## 8.3. Frequency-Domain Analysis

The Fourier Transform [17] is a technique used to analyze signals in the frequency domain. Let $f(x, y)$ be an intensity function for an image, where $x$ and $y$ are real variables representing the distance along each principal direction across the image. This function is referred to as a spatial function (as its value depends on the spatial coordinates) and the Fourier transform of this function $F$ is the frequency space function. The two-dimensional Fourier transform is defined as:

$$F(u, v) = \frac{1}{MN} \int_{x=0}^{N-1} \int_{y=0}^{M-1} f(x, y) e^{-j2\Pi\left(\frac{ux}{N} + \frac{vy}{M}\right)} dxdy \qquad (5)$$

where $u$ and $v$ are the spatial frequency variables in the horizontal and vertical direction and $M$, $N$ refer to the sample indices in the horizontal and vertical directions respectively.

## 8.4. The Spatial Sampling Process

The process of capturing an image in the digital domain involves the use of a camera to capture the image, with subsequent analog-to-digital conversion. The block diagram in Figure 5 displays the typical steps involved in this process. A number of factors closely associated with the capture process determine the frequency content of the image. These include the magnification of the camera lens, its aperture size, the distance of the camera from the object and the resolution of the scanning process.

In case of the USFS image database, the images of the plots were taken at a distance of 50 feet from the observer position. The area of each plot is 0.5 acres, and the width of each sampled image is 1536 pixels. Since an acre is equivalent to 208.71’ x 208.71’, 0.5 acres corresponds to an area of 147.58’ x 147.58’ or 2023.43 sq. meters. The resolution of an image can be computed by dividing the physical distance spanning the image by the number of pixels in the image:

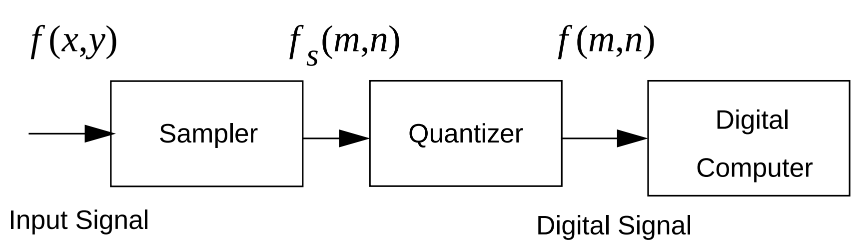


Figure 5. A block diagram depicting the digitization process.

$$\text{resolution} = (44.98\ \text{meters}) / (1536\ \text{pixels}) = 0.029284\ \text{meters/pixel} \qquad (6)$$

The spatial sampling frequency is the inverse of this resolution, and the Nyquist rate is twice this frequency, or 68.297Hz:

$$\text{spatial sample frequency} = \frac{1}{\text{resolution}} = 34.1483\ \text{Hz} \quad . \qquad (7)$$

Of course, the sampling process is more subtle in the case of a photograph, which is a two-dimensional representation of a three-dimensional view. Various factors, such as the perspective of the image, influence the frequency content of the image. For example, trees which are in the background of the image are farther away than trees in the foreground. This means that the distance between the trees is greater in the background compared to the distance between trees in the foreground. The background of the image is blurred by camera aberrations, atmospheric effects etc., and our eyes focus more on the objects closer to the eye than that are farther away. Same is the case with the camera. Since the trees in the background are out of focus, they appear blurred and the image loses the high spatial frequency content for the background. Another aspect of viewing forestry images is that, in general it is the quality of the foreground trees in which one is interested. Since, Nyquist frequency is lower for images in the background, no aliasing occurs if the Nyquist rate is set to satisfy the foreground of the image.

Figures 6 and 7 display the magnitude spectrum for a two-dimensional Fourier Transform (FT) of two typical images from the USFS database. These are log-linear plots: the vertical axis represents the Fourier Transform on a dB scale, the horizontal axes represent normalized spatial frequency plotted on linear scales. These spectra were computed using a 128 x 128 section of an image. A close look the two spectra reveals a shallow valley, which is equivalent to a low-pass frequency response (in two dimensions). This low-pass characteristic of the frequency responses can be better seen by examining a single slice of the spectrum. These are shown in Figure 8.

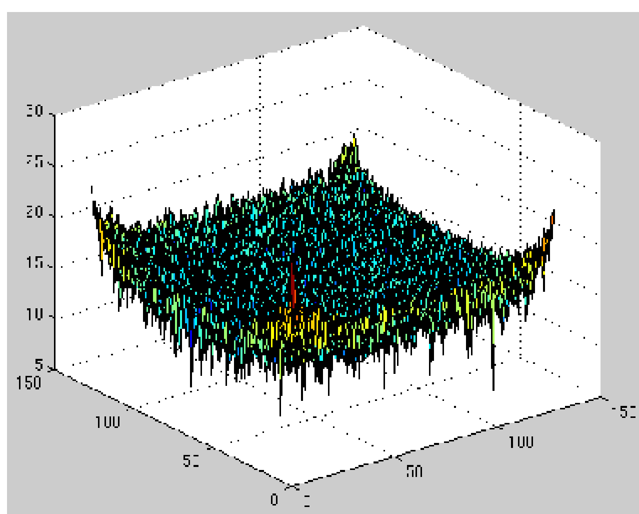


Figure 6. Two-dimensional frequency response of an image with long trees, sunlight and sky. This is a log-linear plot with x and y axes corresponding to spatial frequency, and the vertical axis corresponding to the log magnitude of the spectrum.

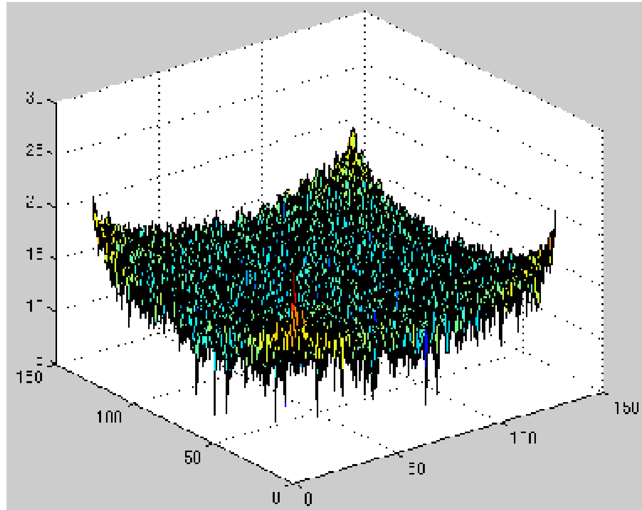

Figure 7. 2D frequency response of an image with bushes only. This is a log-linear plot with x and y axis range from log(1) to log(128) and the z-axis represents the log (magnitude of spectrum).

Note that the image in Figure 6 has more high frequency content than the image in Figure 7. The image in Figure 6 contains long trees, sky and sunlight, while the image of Figure 7 only has bushes and a slight variation in lighting. Consequently, the image in Figure 7 has more moderate transitions in gray scale values and hence a lower bandwidth. Note also that from Figure 6 we can determine that the images are oversampled to a large extent. Typically, most of the energy in the spectrum is contained in the first 4.5 Hz of the spectrum. Thus, sampling at 9 Hz (as opposed to 70 Hz) would have been sufficient to satisfy the Nyquist criterion assuming low-pass filtering.

The images were originally scanned in the proprietary Kodak PhotoCD format with each image taking about 6 Mbytes of space. The Kodak PhotoCD consists of images at 2x, 4x and 16x resolution, which respectively correspond to half, one-fourth and one-sixteenth of the maximum PhotoCD resolution. We have worked with the 4x PhotoCD resolution which generates PPM format images in a 1536 pixel wide x 1024 pixels high format. The 4 x resolution was selected as it approximately gives the same image size in the PPM format as it has in the PCD format. This ensures that we still have the same resolution in the PPM format as that in the original PCD format. Each image at this resolution requires about 5 Mbytes of disk space.

## 9. CONCLUSIONS

We have provided an overview of the USFS Scenic Beauty Estimation Database (USFS-SBED). Such databases are an important step towards the development of pervasive technology. Though comprising only 677 images, this database, because it combines human subjective data with raw image data, is an extremely valuable tool to support subsequent research [13]. The images have been prepared in a PPM file format that includes auxiliary information about the images, resulting in a reasonably self-contained database. We have plans in 1997 to augment the database with additional images being collected by USFS SRS.

Several tools have been developed to support research on this database. These tools are being made available along with the image data in an effort to standardize the evaluation process. An

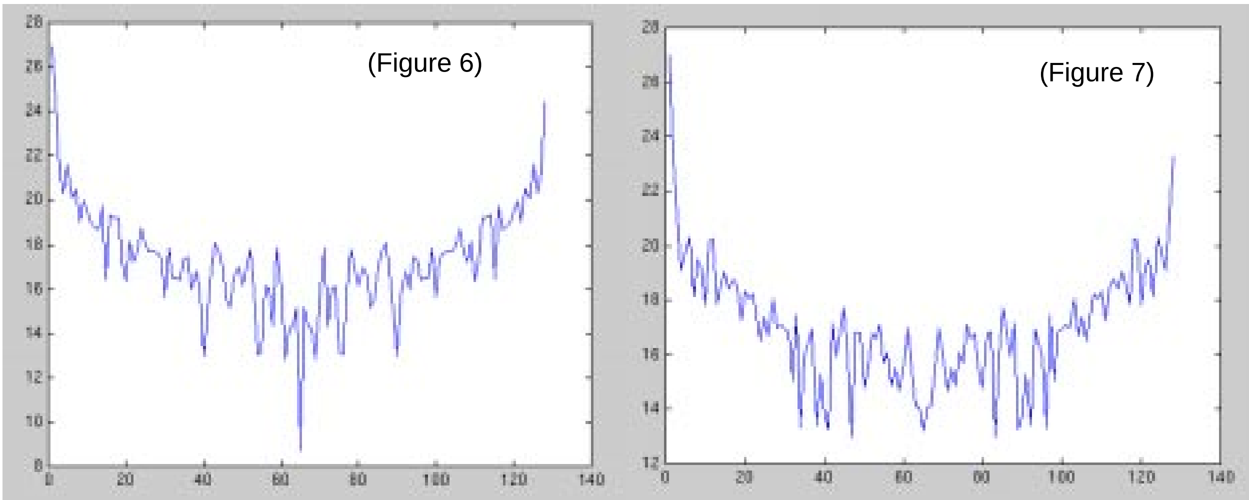


Figure 8. A slice taken in the vertical direction of the spectra shown in Figures 6 and 7. We clearly see the low-pass characteristic of the spectrum from these plots.

overview of the organization of the database in terms of its directory structure is given in Appendix A as well as Tables 6-8. The database and software together requires approximately 3.5 Gbytes of disk space. For further information about this database and research project, consult the ISIP web site: *http://www.isip.msstate.edu*.

## 10. ACKNOWLEDGEMENTS

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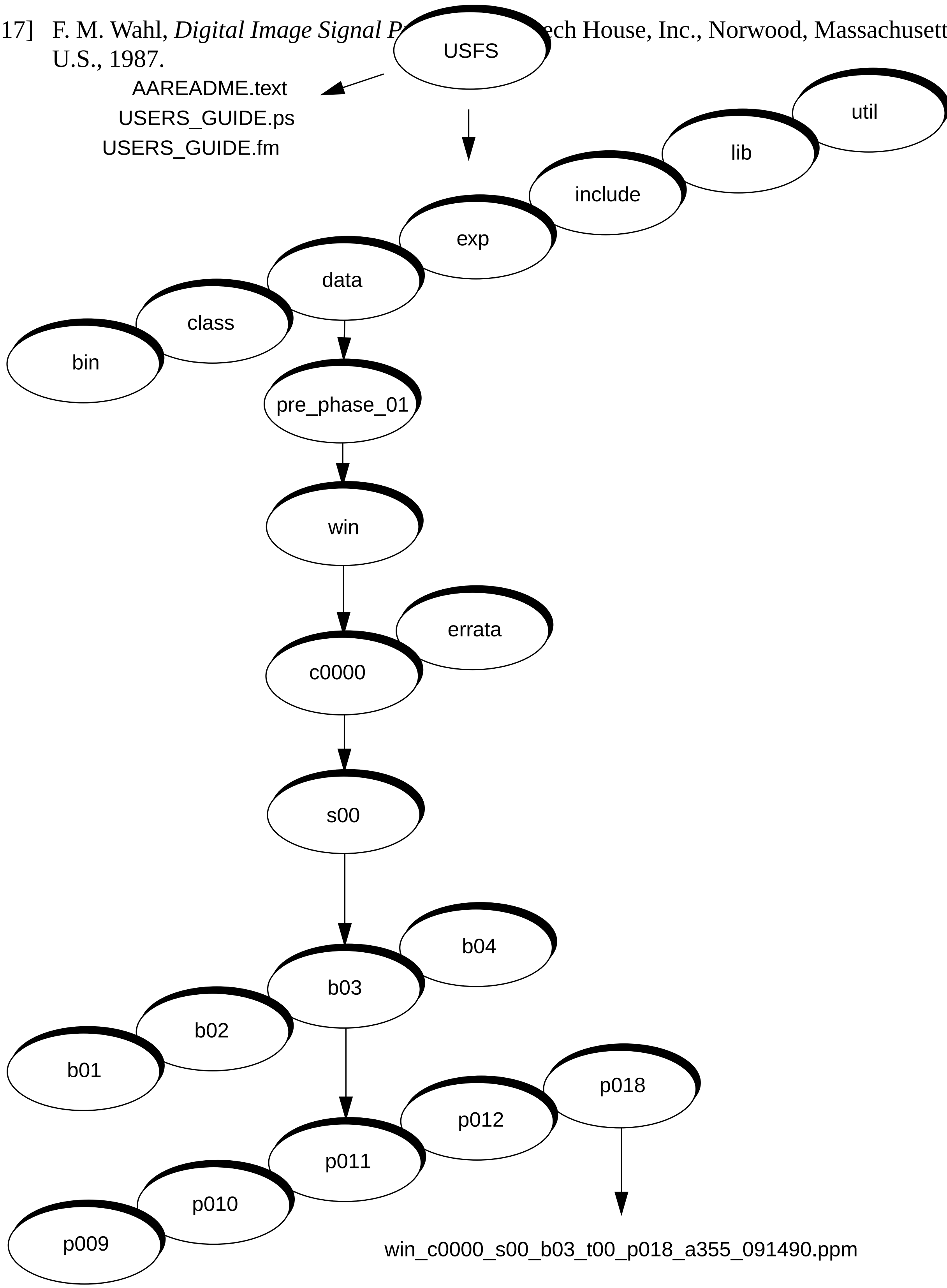

# APPENDIX A. AN OVERVIEW OF THE DATABASE ORGANIZATION

## APPENDIX B. PCD TO PPM CONVERSION

These are the steps required to transfer a file from the CDs distributed by USFS, which contain images in Kodak's PhotoCD format, to the ppm format used in this database.

- Place the CD in isip00 (our Sparc 20)'s cd drive.
  The drive will be auto mounted by the OS.
- Copy all images from the CD onto disk into a working directory.
- From that directory, type: pcd_to_ppm.sh *.PCD

The resulting images will now be stored at the desired resolution in a ppm format. All software developed for USFS-related projects is based on the ppm format.

## APPENDIX C. DATABASE LISTING

The database is divided into three groups: baseline images, errata, and experimental images.

### Baseline Images (40 files):

| Index | Filename | Index | Filename |
|---|---|---|---|
| 1 | win_c0000_s00_b01_t02_p003_a045_040595.ppm | 21 | win_c0000_s00_b02_t03_p005_a270_040495.ppm |
| 2 | win_c0000_s00_b01_t02_p003_a045_040991.ppm | 22 | win_c0000_s00_b02_t03_p005_a270_040891.ppm |
| 3 | win_c0000_s00_b01_t02_p003_a045_072994.ppm | 23 | win_c0000_s00_b02_t03_p005_a270_102294.ppm |
| 4 | win_c0000_s00_b01_t02_p003_a045_091590.ppm | 24 | win_c0000_s00_b02_t03_p005_a270_110590.ppm |
| 5 | win_c0000_s00_b01_t02_p003_a135_102294.ppm | 25 | win_c0000_s00_b03_t00_p018_a220_040495.ppm |
| 6 | win_c0000_s00_b01_t02_p003_a135_110490.ppm | 26 | win_c0000_s00_b03_t00_p018_a220_040891.ppm |
| 7 | win_c0000_s00_b01_t02_p003_a270_010895.ppm | 27 | win_c0000_s00_b03_t00_p018_a265_010595.ppm |
| 8 | win_c0000_s00_b01_t02_p003_a270_013191.ppm | 28 | win_c0000_s00_b03_t00_p018_a265_013191.ppm |
| 9 | win_c0000_s00_b01_t04_p004_a090_010895.ppm | 29 | win_c0000_s00_b03_t00_p018_a265_102394.ppm |
| 10 | win_c0000_s00_b01_t04_p004_a090_013191.ppm | 30 | win_c0000_s00_b03_t00_p018_a265_110590.ppm |
| 11 | win_c0000_s00_b01_t04_p004_a090_072994.ppm | 31 | win_c0000_s00_b03_t00_p018_a355_073094.ppm |
| 12 | win_c0000_s00_b01_t04_p004_a090_091590.ppm | 32 | win_c0000_s00_b03_t00_p018_a355_091490.ppm |
| 13 | win_c0000_s00_b01_t04_p004_a090_102294.ppm | 33 | win_c0000_s00_b04_t01_p015_a060_040495.ppm |
| 14 | win_c0000_s00_b01_t04_p004_a090_110490.ppm | 34 | win_c0000_s00_b04_t01_p015_a060_040891.ppm |
| 15 | win_c0000_s00_b01_t04_p004_a360_040595.ppm | 35 | win_c0000_s00_b04_t01_p015_a105_010795.ppm |
| 16 | win_c0000_s00_b01_t04_p004_a360_040991.ppm | 36 | win_c0000_s00_b04_t01_p015_a105_013191.ppm |
| 17 | win_c0000_s00_b02_t03_p005_a135_010595.ppm | 37 | win_c0000_s00_b04_t01_p015_a240_073094.ppm |
| 18 | win_c0000_s00_b02_t03_p005_a135_013191.ppm | 38 | win_c0000_s00_b04_t01_p015_a240_091490.ppm |
| 19 | win_c0000_s00_b02_t03_p005_a135_072894.ppm | 39 | win_c0000_s00_b04_t01_p015_a330_102294.ppm |
| 20 | win_c0000_s00_b02_t03_p005_a135_091390.ppm | 40 | win_c0000_s00_b04_t01_p015_a330_110590.ppm |

### Errata (23 files):

| Index | Filename | Index | Filename |
|---|---|---|---|
| 1 | cd_0102/img0044.ppm (anomalous) | 13 | cd_0174/img0001.ppm |
| 2 | cd_0122/img0053.ppm (different size) | 14 | cd_0671/img0101.ppm |
| 3 | cd_0172/img0001.ppm | 15 | cd_0671/img0102.ppm |
| 4 | cd_0173/img0092.ppm | 16 | cd_0671/img0103.ppm |
| 5 | cd_0173/img0101.ppm | 17 | cd_0671/img0104.ppm |
| 6 | cd_0173/img0102.ppm | 18 | cd_0671/img0105.ppm |
| 7 | cd_0173/img0103.ppm | 19 | cd_0671/img0106.ppm |
| 8 | cd_0173/img0104.ppm | 20 | cd_0673/img0001.ppm |
| 9 | cd_0173/img0105.ppm | 21 | cd_0673/img0002.ppm |
| 10 | cd_0173/img0106.ppm | 22 | cd_0673/img0003.ppm |
| 11 | cd_0173/img0107.ppm | 23 | cd_0673/img0004.ppm |
| 12 | cd_0173/img0108.ppm | | |

## Experimental Images (637 files):

| Filename | Train | | | | Test | | | | SBE |
|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | |
| win_c0000_s00_b01_t03_p001_a045_010895.ppm | • | • | • | | | | | • | -48.43 |
| win_c0000_s00_b01_t03_p001_a045_013191.ppm | • | • | • | | | | | • | -32.29 |
| win_c0000_s00_b01_t03_p001_a045_040595.ppm | • | • | • | | | | | • | -31.80 |
| win_c0000_s00_b01_t03_p001_a045_040991.ppm | • | • | • | | | | | • | -32.83 |
| win_c0000_s00_b01_t03_p001_a045_072994.ppm | • | • | • | | | | | • | 23.74 |
| win_c0000_s00_b01_t03_p001_a045_091590.ppm | • | • | • | | | | | • | 19.16 |
| win_c0000_s00_b01_t03_p001_a045_102294.ppm | • | • | • | | | | | • | -40.54 |
| win_c0000_s00_b01_t03_p001_a045_110590.ppm | • | • | • | | | | | • | -82.49 |
| win_c0000_s00_b01_t03_p001_a090_010895.ppm | • | • | • | | | | | • | -36.68 |
| win_c0000_s00_b01_t03_p001_a090_013191.ppm | • | • | • | | | | | • | -47.12 |
| win_c0000_s00_b01_t03_p001_a090_040595.ppm | • | • | • | | | | | • | 14.54 |
| win_c0000_s00_b01_t03_p001_a090_040991.ppm | • | • | • | | | | | • | 17.48 |
| win_c0000_s00_b01_t03_p001_a090_072994.ppm | • | • | • | | | | | • | 58.08 |
| win_c0000_s00_b01_t03_p001_a090_091590.ppm | • | • | • | | | | | • | 29.37 |
| win_c0000_s00_b01_t03_p001_a090_102294.ppm | • | • | • | | | | | • | -13.41 |
| win_c0000_s00_b01_t03_p001_a090_110590.ppm | • | • | • | | | | | • | -19.03 |
| win_c0000_s00_b01_t03_p001_a135_010895.ppm | • | • | • | | | | | • | -11.94 |
| win_c0000_s00_b01_t03_p001_a135_013191.ppm | • | • | • | | | | | • | -37.87 |
| win_c0000_s00_b01_t03_p001_a135_102294.ppm | • | • | • | | | | | • | 13.97 |
| win_c0000_s00_b01_t03_p001_a135_110590.ppm | • | • | • | | | | | • | -14.70 |
| win_c0000_s00_b01_t03_p001_a180_010895.ppm | • | • | • | | | | | • | -81.47 |
| win_c0000_s00_b01_t03_p001_a180_013191.ppm | • | • | • | | | | | • | -32.00 |
| win_c0000_s00_b01_t03_p001_a180_072994.ppm | • | • | • | | | | | • | 28.70 |
| win_c0000_s00_b01_t03_p001_a180_091590.ppm | • | • | • | | | | | • | 63.71 |
| win_c0000_s00_b01_t03_p001_a225_040595.ppm | • | • | • | | | | | • | -28.85 |
| win_c0000_s00_b01_t03_p001_a225_040991.ppm | • | • | • | | | | | • | 41.22 |
| win_c0000_s00_b01_t03_p001_a225_072994.ppm | • | • | • | | | | | • | 79.74 |
| win_c0000_s00_b01_t03_p001_a225_091590.ppm | • | • | • | | | | | • | 65.93 |
| win_c0000_s00_b01_t03_p001_a360_040595.ppm | • | • | • | | | | | • | -36.37 |
| win_c0000_s00_b01_t03_p001_a360_040991.ppm | • | • | • | | | | | • | -34.29 |
| win_c0000_s00_b01_t03_p001_a360_102294.ppm | • | • | • | | | | | • | -14.95 |
| win_c0000_s00_b01_t03_p001_a360_110590.ppm | • | • | • | | | | | • | -21.44 |

| Filename | Train | | | | Test | | | | SBE |
|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | |
| win_c0000_s00_b01_t01_p002_a045_040595.ppm | | • | • | • | • | | | | 7.08 |
| win_c0000_s00_b01_t01_p002_a045_040991.ppm | | • | • | • | • | | | | -44.69 |
| win_c0000_s00_b01_t01_p002_a090_010895.ppm | | • | • | • | • | | | | -100.85 |
| win_c0000_s00_b01_t01_p002_a090_013191.ppm | | • | • | • | • | | | | -40.58 |
| win_c0000_s00_b01_t01_p002_a135_010895.ppm | | • | • | • | • | | | | -111.12 |
| win_c0000_s00_b01_t01_p002_a135_013191.ppm | | • | • | • | • | | | | -76.18 |
| win_c0000_s00_b01_t01_p002_a135_040595.ppm | | • | • | • | • | | | | -9.70 |
| win_c0000_s00_b01_t01_p002_a135_040991.ppm | | • | • | • | • | | | | 13.06 |
| win_c0000_s00_b01_t01_p002_a180_010895.ppm | | • | • | • | • | | | | -124.33 |
| win_c0000_s00_b01_t01_p002_a180_013191.ppm | | • | • | • | • | | | | -70.38 |
| win_c0000_s00_b01_t01_p002_a180_072994.ppm | | • | • | • | • | | | | -21.09 |
| win_c0000_s00_b01_t01_p002_a180_091590.ppm | | • | • | • | • | | | | 49.86 |
| win_c0000_s00_b01_t01_p002_a225_010895.ppm | | • | • | • | • | | | | -99.94 |
| win_c0000_s00_b01_t01_p002_a225_013191.ppm | | • | • | • | • | | | | -73.08 |
| win_c0000_s00_b01_t01_p002_a225_072994.ppm | | • | • | • | • | | | | 55.12 |
| win_c0000_s00_b01_t01_p002_a225_091590.ppm | | • | • | • | • | | | | 32.73 |
| win_c0000_s00_b01_t01_p002_a225_102294.ppm | | • | • | • | • | | | | 15.71 |
| win_c0000_s00_b01_t01_p002_a225_110590.ppm | | • | • | • | • | | | | -51.65 |
| win_c0000_s00_b01_t01_p002_a270_072994.ppm | | • | • | • | • | | | | 56.42 |
| win_c0000_s00_b01_t01_p002_a270_091590.ppm | | • | • | • | • | | | | -3.51 |
| win_c0000_s00_b01_t01_p002_a270_102294.ppm | | • | • | • | • | | | | 13.82 |
| win_c0000_s00_b01_t01_p002_a270_110590.ppm | | • | • | • | • | | | | -26.82 |
| win_c0000_s00_b01_t01_p002_a315_040595.ppm | | • | • | • | • | | | | -10.95 |
| win_c0000_s00_b01_t01_p002_a315_040991.ppm | | • | • | • | • | | | | -96.46 |
| win_c0000_s00_b01_t01_p002_a315_072994.ppm | | • | • | • | • | | | | 62.82 |
| win_c0000_s00_b01_t01_p002_a315_091590.ppm | | • | • | • | • | | | | -13.29 |
| win_c0000_s00_b01_t01_p002_a315_102294.ppm | | • | • | • | • | | | | 31.21 |
| win_c0000_s00_b01_t01_p002_a360_040595.ppm | | • | • | • | • | | | | 6.97 |
| win_c0000_s00_b01_t01_p002_a360_040991.ppm | | • | • | • | • | | | | -6.02 |
| win_c0000_s00_b01_t01_p002_a360_102294.ppm | | • | • | • | • | | | | -15.88 |
| win_c0000_s00_b01_t01_p002_a360_110590.ppm | | • | • | • | • | | | | -44.45 |
| win_c0000_s00_b01_t02_p003_a045_010895.ppm | • | • | | • | | | • | | -58.09 |
| win_c0000_s00_b01_t02_p003_a045_013191.ppm | • | • | | • | | | • | | -70.45 |

| Filename | Train | | | | Test | | | | SBE |
|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | |
| win_c0000_s00_b01_t02_p003_a090_010895.ppm | • | • | | • | | | • | | -64.41 |
| win_c0000_s00_b01_t02_p003_a090_013191.ppm | • | • | | • | | | • | | -58.19 |
| win_c0000_s00_b01_t02_p003_a090_040595.ppm | • | • | | • | | | • | | 23.49 |
| win_c0000_s00_b01_t02_p003_a090_040991.ppm | • | • | | • | | | • | | 53.24 |
| win_c0000_s00_b01_t02_p003_a135_010895.ppm | • | • | | • | | | • | | -45.23 |
| win_c0000_s00_b01_t02_p003_a135_013191.ppm | • | • | | • | | | • | | -71.70 |
| win_c0000_s00_b01_t02_p003_a135_072994.ppm | • | • | | • | | | • | | 43.70 |
| win_c0000_s00_b01_t02_p003_a135_091590.ppm | • | • | | • | | | • | | 25.83 |
| win_c0000_s00_b01_t02_p003_a180_010895.ppm | • | • | | • | | | • | | -105.77 |
| win_c0000_s00_b01_t02_p003_a180_013191.ppm | • | • | | • | | | • | | -125.04 |
| win_c0000_s00_b01_t02_p003_a180_072994.ppm | • | • | | • | | | • | | 21.12 |
| win_c0000_s00_b01_t02_p003_a180_091590.ppm | • | • | | • | | | • | | 58.63 |
| win_c0000_s00_b01_t02_p003_a225_072994.ppm | • | • | | • | | | • | | 69.48 |
| win_c0000_s00_b01_t02_p003_a225_091590.ppm | • | • | | • | | | • | | 44.49 |
| win_c0000_s00_b01_t02_p003_a225_102294.ppm | • | • | | • | | | • | | 1.04 |
| win_c0000_s00_b01_t02_p003_a225_110490.ppm | • | • | | • | | | • | | 36.12 |
| win_c0000_s00_b01_t02_p003_a270_040595.ppm | • | • | | • | | | • | | -38.19 |
| win_c0000_s00_b01_t02_p003_a270_040991.ppm | • | • | | • | | | • | | -61.08 |
| win_c0000_s00_b01_t02_p003_a270_102294.ppm | • | • | | • | | | • | | 14.84 |
| win_c0000_s00_b01_t02_p003_a270_110490.ppm | • | • | | • | | | • | | -18.11 |
| win_c0000_s00_b01_t02_p003_a315_040595.ppm | • | • | | • | | | • | | -15.81 |
| win_c0000_s00_b01_t02_p003_a315_040991.ppm | • | • | | • | | | • | | -37.52 |
| win_c0000_s00_b01_t02_p003_a315_102294.ppm | • | • | | • | | | • | | -8.49 |
| win_c0000_s00_b01_t02_p003_a315_110490.ppm | • | • | | • | | | • | | -55.53 |
| win_c0000_s00_b01_t02_p003_a360_040595.ppm | • | • | | • | | | • | | 11.65 |
| win_c0000_s00_b01_t02_p003_a360_040991.ppm | • | • | | • | | | • | | -8.42 |
| win_c0000_s00_b01_t02_p003_a360_072994.ppm | • | • | | • | | | • | | 31.91 |
| win_c0000_s00_b01_t02_p003_a360_091590.ppm | • | • | | • | | | • | | 18.76 |
| win_c0000_s00_b01_t02_p003_a360_102294.ppm | • | • | | • | | | • | | 8.96 |
| win_c0000_s00_b01_t02_p003_a360_110490.ppm | • | • | | • | | | • | | -0.21 |
| win_c0000_s00_b01_t04_p004_a045_010895.ppm | • | | • | • | | • | | | -2.51 |
| win_c0000_s00_b01_t04_p004_a045_013191.ppm | • | | • | • | | • | | | -28.06 |
| win_c0000_s00_b01_t04_p004_a045_040595.ppm | • | | • | • | | • | | | 20.43 |

| Filename | Train | | | | Test | | | | SBE |
|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | |
| win_c0000_s00_b01_t04_p004_a045_040991.ppm | • | | • | • | | • | | | 4.68 |
| win_c0000_s00_b01_t04_p004_a045_072994.ppm | • | | • | • | | • | | | 83.47 |
| win_c0000_s00_b01_t04_p004_a045_091590.ppm | • | | • | • | | • | | | 97.23 |
| win_c0000_s00_b01_t04_p004_a045_102294.ppm | • | | • | • | | • | | | -4.10 |
| win_c0000_s00_b01_t04_p004_a045_110490.ppm | • | | • | • | | • | | | -15.91 |
| win_c0000_s00_b01_t04_p004_a090_040595.ppm | • | | • | • | | • | | | 20.35 |
| win_c0000_s00_b01_t04_p004_a090_040991.ppm | • | | • | • | | • | | | 24.16 |
| win_c0000_s00_b01_t04_p004_a135_040595.ppm | • | | • | • | | • | | | -9.22 |
| win_c0000_s00_b01_t04_p004_a135_040991.ppm | • | | • | • | | • | | | -44.16 |
| win_c0000_s00_b01_t04_p004_a135_102294.ppm | • | | • | • | | • | | | -26.42 |
| win_c0000_s00_b01_t04_p004_a135_110490.ppm | • | | • | • | | • | | | -55.10 |
| win_c0000_s00_b01_t04_p004_a180_040595.ppm | • | | • | • | | • | | | -0.24 |
| win_c0000_s00_b01_t04_p004_a180_040991.ppm | • | | • | • | | • | | | 31.20 |
| win_c0000_s00_b01_t04_p004_a180_072994.ppm | • | | • | • | | • | | | 68.25 |
| win_c0000_s00_b01_t04_p004_a180_091590.ppm | • | | • | • | | • | | | 90.56 |
| win_c0000_s00_b01_t04_p004_a180_102294.ppm | • | | • | • | | • | | | -33.77 |
| win_c0000_s00_b01_t04_p004_a180_110490.ppm | • | | • | • | | • | | | 14.89 |
| win_c0000_s00_b01_t04_p004_a225_010895.ppm | • | | • | • | | • | | | -40.05 |
| win_c0000_s00_b01_t04_p004_a225_013191.ppm | • | | • | • | | • | | | -64.95 |
| win_c0000_s00_b01_t04_p004_a225_091590.ppm | • | | • | • | | • | | | 20.16 |
| win_c0000_s00_b01_t04_p004_a270_010895.ppm | • | | • | • | | • | | | -61.24 |
| win_c0000_s00_b01_t04_p004_a270_013191.ppm | • | | • | • | | • | | | -101.86 |
| win_c0000_s00_b01_t04_p004_a270_072994.ppm | • | | • | • | | • | | | 34.02 |
| win_c0000_s00_b01_t04_p004_a270_091590.ppm | • | | • | • | | • | | | 41.34 |
| win_c0000_s00_b01_t04_p004_a315_010895.ppm | • | | • | • | | • | | | -105.64 |
| win_c0000_s00_b01_t04_p004_a315_013191.ppm | • | | • | • | | • | | | -75.05 |
| win_c0000_s00_b01_t04_p004_a360_102294.ppm | • | | • | • | | • | | | 20.28 |
| win_c0000_s00_b01_t04_p004_a360_110490.ppm | • | | • | • | | • | | | 5.12 |
| win_c0000_s00_b01_t00_p020_a015_040595.ppm | • | • | | • | | | • | | 20.38 |
| win_c0000_s00_b01_t00_p020_a015_040991.ppm | • | • | | • | | | • | | 48.29 |
| win_c0000_s00_b01_t00_p020_a060_040595.ppm | • | • | | • | | | • | | 34.66 |
| win_c0000_s00_b01_t00_p020_a060_040991.ppm | • | • | | • | | | • | | 18.64 |
| win_c0000_s00_b01_t00_p020_a060_072094.ppm | • | • | | • | | | • | | 37.72 |

| Filename | Train | | | | Test | | | | SBE |
|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | |
| win_c0000_s00_b01_t00_p020_a060_091590.ppm | • | • | | • | | | • | | 84.63 |
| win_c0000_s00_b01_t00_p020_a060_102294.ppm | • | • | | • | | | • | | 35.70 |
| win_c0000_s00_b01_t00_p020_a060_110490.ppm | • | • | | • | | | • | | 11.93 |
| win_c0000_s00_b01_t00_p020_a105_010895.ppm | • | • | | • | | | • | | -13.06 |
| win_c0000_s00_b01_t00_p020_a105_013191.ppm | • | • | | • | | | • | | -38.80 |
| win_c0000_s00_b01_t00_p020_a105_102294.ppm | • | • | | • | | | • | | 43.71 |
| win_c0000_s00_b01_t00_p020_a105_110490.ppm | • | • | | • | | | • | | 18.71 |
| win_c0000_s00_b01_t00_p020_a150_040595.ppm | • | • | | • | | | • | | -10.42 |
| win_c0000_s00_b01_t00_p020_a150_040991.ppm | • | • | | • | | | • | | 18.09 |
| win_c0000_s00_b01_t00_p020_a150_072994.ppm | • | • | | • | | | • | | 28.74 |
| win_c0000_s00_b01_t00_p020_a150_091590.ppm | • | • | | • | | | • | | 100.26 |
| win_c0000_s00_b01_t00_p020_a150_102294.ppm | • | • | | • | | | • | | 19.49 |
| win_c0000_s00_b01_t00_p020_a150_110490.ppm | • | • | | • | | | • | | -11.22 |
| win_c0000_s00_b01_t00_p020_a195_010895.ppm | • | • | | • | | | • | | -44.29 |
| win_c0000_s00_b01_t00_p020_a195_013191.ppm | • | • | | • | | | • | | -12.58 |
| win_c0000_s00_b01_t00_p020_a195_040595.ppm | • | • | | • | | | • | | -42.82 |
| win_c0000_s00_b01_t00_p020_a195_040991.ppm | • | • | | • | | | • | | 28.52 |
| win_c0000_s00_b01_t00_p020_a195_072994.ppm | • | • | | • | | | • | | 48.34 |
| win_c0000_s00_b01_t00_p020_a195_091590.ppm | • | • | | • | | | • | | 58.38 |
| win_c0000_s00_b01_t00_p020_a195_102294.ppm | • | • | | • | | | • | | 10.89 |
| win_c0000_s00_b01_t00_p020_a195_110490.ppm | • | • | | • | | | • | | -4.96 |
| win_c0000_s00_b01_t00_p020_a240_010895.ppm | • | • | | • | | | • | | -51.79 |
| win_c0000_s00_b01_t00_p020_a240_013191.ppm | • | • | | • | | | • | | -38.15 |
| win_c0000_s00_b01_t00_p020_a285_010895.ppm | • | • | | • | | | • | | -27.52 |
| win_c0000_s00_b01_t00_p020_a285_013191.ppm | • | • | | • | | | • | | -27.20 |
| win_c0000_s00_b01_t00_p020_a330_072994.ppm | • | • | | • | | | • | | 14.35 |
| win_c0000_s00_b01_t00_p020_a330_091590.ppm | • | • | | • | | | • | | 45.41 |
| win_c0000_s00_b02_t03_p005_a045_040495.ppm | • | | • | • | | • | | | -62.80 |
| win_c0000_s00_b02_t03_p005_a045_040891.ppm | • | | • | • | | • | | | -30.39 |
| win_c0000_s00_b02_t03_p005_a045_102294.ppm | • | | • | • | | • | | | 55.85 |
| win_c0000_s00_b02_t03_p005_a045_110590.ppm | • | | • | • | | • | | | -48.29 |
| win_c0000_s00_b02_t03_p005_a090_010595.ppm | • | | • | • | | • | | | -11.53 |
| win_c0000_s00_b02_t03_p005_a090_013191.ppm | • | | • | • | | • | | | -93.54 |

| Filename | Train | | | | Test | | | | SBE |
|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | |
| win_c0000_s00_b02_t03_p005_a090_040495.ppm | • | | • | • | | • | | | -7.89 |
| win_c0000_s00_b02_t03_p005_a090_040891.ppm | • | | • | • | | • | | | -2.65 |
| win_c0000_s00_b02_t03_p005_a090_072894.ppm | • | | • | • | | • | | | 38.92 |
| win_c0000_s00_b02_t03_p005_a090_091390.ppm | • | | • | • | | • | | | 94.20 |
| win_c0000_s00_b02_t03_p005_a090_102294.ppm | • | | • | • | | • | | | 11.06 |
| win_c0000_s00_b02_t03_p005_a090_111590.ppm | • | | • | • | | • | | | 17.27 |
| win_c0000_s00_b02_t03_p005_a225_010595.ppm | • | | • | • | | • | | | -75.26 |
| win_c0000_s00_b02_t03_p005_a225_013191.ppm | • | | • | • | | • | | | -33.16 |
| win_c0000_s00_b02_t03_p005_a225_040495.ppm | • | | • | • | | • | | | -5.56 |
| win_c0000_s00_b02_t03_p005_a225_040891.ppm | • | | • | • | | • | | | -8.10 |
| win_c0000_s00_b02_t03_p005_a225_072894.ppm | • | | • | • | | • | | | 52.79 |
| win_c0000_s00_b02_t03_p005_a225_091390.ppm | • | | • | • | | • | | | 32.41 |
| win_c0000_s00_b02_t03_p005_a225_102294.ppm | • | | • | • | | • | | | -27.00 |
| win_c0000_s00_b02_t03_p005_a225_110590.ppm | • | | • | • | | • | | | -12.32 |
| win_c0000_s00_b02_t03_p005_a315_010595.ppm | • | | • | • | | • | | | -63.89 |
| win_c0000_s00_b02_t03_p005_a315_013191.ppm | • | | • | • | | • | | | -122.31 |
| win_c0000_s00_b02_t03_p005_a315_072894.ppm | • | | • | • | | • | | | 72.01 |
| win_c0000_s00_b02_t03_p005_a315_091390.ppm | • | | • | • | | • | | | 33.30 |
| win_c0000_s00_b02_t03_p005_a360_010595.ppm | • | | • | • | | • | | | -71.20 |
| win_c0000_s00_b02_t03_p005_a360_013191.ppm | • | | • | • | | • | | | -85.73 |
| win_c0000_s00_b02_t03_p005_a360_040495.ppm | • | | • | • | | • | | | -15.70 |
| win_c0000_s00_b02_t03_p005_a360_040891.ppm | • | | • | • | | • | | | -19.43 |
| win_c0000_s00_b02_t03_p005_a360_072894.ppm | • | | • | • | | • | | | 85.69 |
| win_c0000_s00_b02_t03_p005_a360_091390.ppm | • | | • | • | | • | | | 3.04 |
| win_c0000_s00_b02_t03_p005_a360_102294.ppm | • | | • | • | | • | | | -2.61 |
| win_c0000_s00_b02_t03_p005_a360_110590.ppm | • | | • | • | | • | | | -56.54 |
| win_c0000_s00_b02_t01_p006_a090_040495.ppm | • | • | | • | | | • | | 14.17 |
| win_c0000_s00_b02_t01_p006_a090_040891.ppm | • | • | | • | | | • | | 8.57 |
| win_c0000_s00_b02_t01_p006_a090_102294.ppm | • | • | | • | | | • | | 10.06 |
| win_c0000_s00_b02_t01_p006_a090_110590.ppm | • | • | | • | | | • | | -12.88 |
| win_c0000_s00_b02_t01_p006_a135_040495.ppm | • | • | | • | | | • | | -28.39 |
| win_c0000_s00_b02_t01_p006_a135_040891.ppm | • | • | | • | | | • | | 29.40 |
| win_c0000_s00_b02_t01_p006_a135_102294.ppm | • | • | | • | | | • | | -26.59 |

| Filename | Train | | | | Test | | | | SBE |
|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | |
| win_c0000_s00_b02_t01_p006_a135_110590.ppm | • | • | | • | | | • | | 41.33 |
| win_c0000_s00_b02_t01_p006_a180_040495.ppm | • | • | | • | | | • | | 30.73 |
| win_c0000_s00_b02_t01_p006_a180_040891.ppm | • | • | | • | | | • | | 39.30 |
| win_c0000_s00_b02_t01_p006_a180_102294.ppm | • | • | | • | | | • | | -63.09 |
| win_c0000_s00_b02_t01_p006_a180_110590.ppm | • | • | | • | | | • | | -42.70 |
| win_c0000_s00_b02_t01_p006_a225_010595.ppm | • | • | | • | | | • | | -96.04 |
| win_c0000_s00_b02_t01_p006_a225_013191.ppm | • | • | | • | | | • | | -85.29 |
| win_c0000_s00_b02_t01_p006_a225_072894.ppm | • | • | | • | | | • | | 33.89 |
| win_c0000_s00_b02_t01_p006_a225_091390.ppm | • | • | | • | | | • | | -24.68 |
| win_c0000_s00_b02_t01_p006_a225_102294.ppm | • | • | | • | | | • | | -12.71 |
| win_c0000_s00_b02_t01_p006_a225_110590.ppm | • | • | | • | | | • | | -58.69 |
| win_c0000_s00_b02_t01_p006_a270_010595.ppm | • | • | | • | | | • | | -37.01 |
| win_c0000_s00_b02_t01_p006_a270_013191.ppm | • | • | | • | | | • | | -57.41 |
| win_c0000_s00_b02_t01_p006_a270_072894.ppm | • | • | | • | | | • | | 36.12 |
| win_c0000_s00_b02_t01_p006_a270_091390.ppm | • | • | | • | | | • | | 1.07 |
| win_c0000_s00_b02_t01_p006_a315_010595.ppm | • | • | | • | | | • | | -56.64 |
| win_c0000_s00_b02_t01_p006_a315_013191.ppm | • | • | | • | | | • | | -83.32 |
| win_c0000_s00_b02_t01_p006_a315_072894.ppm | • | • | | • | | | • | | 28.58 |
| win_c0000_s00_b02_t01_p006_a315_091490.ppm | • | • | | • | | | • | | 13.58 |
| win_c0000_s00_b02_t01_p006_a360_010595.ppm | • | • | | • | | | • | | -8.38 |
| win_c0000_s00_b02_t01_p006_a360_013191.ppm | • | • | | • | | | • | | -47.77 |
| win_c0000_s00_b02_t01_p006_a360_040495.ppm | • | • | | • | | | • | | 4.34 |
| win_c0000_s00_b02_t01_p006_a360_040891.ppm | • | • | | • | | | • | | -41.40 |
| win_c0000_s00_b02_t01_p006_a360_072894.ppm | • | • | | • | | | • | | 62.27 |
| win_c0000_s00_b02_t01_p006_a360_091390.ppm | • | • | | • | | | • | | 37.65 |
| win_c0000_s00_b02_t02_p007_a045_040495.ppm | | • | • | • | • | | | | 20.93 |
| win_c0000_s00_b02_t02_p007_a045_040891.ppm | | • | • | • | • | | | | 12.34 |
| win_c0000_s00_b02_t02_p007_a045_102294.ppm | | • | • | • | • | | | | 2.17 |
| win_c0000_s00_b02_t02_p007_a045_110590.ppm | | • | • | • | • | | | | -21.68 |
| win_c0000_s00_b02_t02_p007_a085_010795.ppm | | • | • | • | • | | | | 16.48 |
| win_c0000_s00_b02_t02_p007_a085_013191.ppm | | • | • | • | • | | | | -45.90 |
| win_c0000_s00_b02_t02_p007_a090_072894.ppm | | • | • | • | • | | | | 18.82 |
| win_c0000_s00_b02_t02_p007_a090_091390.ppm | | • | • | • | • | | | | 27.45 |

| Filename | Train | | | | Test | | | | SBE |
|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | |
| win_c0000_s00_b02_t02_p007_a135_010595.ppm | | • | • | • | • | | | | -35.31 |
| win_c0000_s00_b02_t02_p007_a135_013191.ppm | | • | • | • | • | | | | -44.25 |
| win_c0000_s00_b02_t02_p007_a135_072894.ppm | | • | • | • | • | | | | 99.27 |
| win_c0000_s00_b02_t02_p007_a135_091390.ppm | | • | • | • | • | | | | 32.18 |
| win_c0000_s00_b02_t02_p007_a225_010595.ppm | | • | • | • | • | | | | -76.83 |
| win_c0000_s00_b02_t02_p007_a225_013191.ppm | | • | • | • | • | | | | -75.94 |
| win_c0000_s00_b02_t02_p007_a225_072894.ppm | | • | • | • | • | | | | 74.56 |
| win_c0000_s00_b02_t02_p007_a225_091390.ppm | | • | • | • | • | | | | 44.22 |
| win_c0000_s00_b02_t02_p007_a225_102294.ppm | | • | • | • | • | | | | -16.02 |
| win_c0000_s00_b02_t02_p007_a225_110590.ppm | | • | • | • | • | | | | -48.34 |
| win_c0000_s00_b02_t02_p007_a270_040495.ppm | | • | • | • | • | | | | 22.25 |
| win_c0000_s00_b02_t02_p007_a270_040891.ppm | | • | • | • | • | | | | 23.18 |
| win_c0000_s00_b02_t02_p007_a270_102294.ppm | | • | • | • | • | | | | -35.68 |
| win_c0000_s00_b02_t02_p007_a270_110590.ppm | | • | • | • | • | | | | -73.49 |
| win_c0000_s00_b02_t02_p007_a315_040495.ppm | | • | • | • | • | | | | 27.39 |
| win_c0000_s00_b02_t02_p007_a315_040891.ppm | | • | • | • | • | | | | 32.43 |
| win_c0000_s00_b02_t02_p007_a360_010595.ppm | | • | • | • | • | | | | -28.27 |
| win_c0000_s00_b02_t02_p007_a360_013191.ppm | | • | • | • | • | | | | -38.46 |
| win_c0000_s00_b02_t02_p007_a360_040495.ppm | | • | • | • | • | | | | 41.76 |
| win_c0000_s00_b02_t02_p007_a360_040891.ppm | | • | • | • | • | | | | 47.21 |
| win_c0000_s00_b02_t02_p007_a360_072894.ppm | | • | • | • | • | | | | 49.80 |
| win_c0000_s00_b02_t02_p007_a360_091390.ppm | | • | • | • | • | | | | 22.98 |
| win_c0000_s00_b02_t02_p007_a360_102294.ppm | | • | • | • | • | | | | 9.49 |
| win_c0000_s00_b02_t02_p007_a360_110590.ppm | | • | • | • | • | | | | -20.59 |
| win_c0000_s00_b02_t04_p008_a045_010595.ppm | • | • | • | | | | | • | -63.18 |
| win_c0000_s00_b02_t04_p008_a045_013191.ppm | • | • | • | | | | | • | -73.03 |
| win_c0000_s00_b02_t04_p008_a045_040495.ppm | • | • | • | | | | | • | 56.42 |
| win_c0000_s00_b02_t04_p008_a045_040891.ppm | • | • | • | | | | | • | 6.30 |
| win_c0000_s00_b02_t04_p008_a045_072894.ppm | • | • | • | | | | | • | 66.74 |
| win_c0000_s00_b02_t04_p008_a045_091390.ppm | • | • | • | | | | | • | 39.65 |
| win_c0000_s00_b02_t04_p008_a045_102294.ppm | • | • | • | | | | | • | -7.57 |
| win_c0000_s00_b02_t04_p008_a045_110590.ppm | • | • | • | | | | | • | -5.67 |
| win_c0000_s00_b02_t04_p008_a090_010595.ppm | • | • | • | | | | | • | -82.77 |

| Filename | Train | | | | Test | | | | SBE |
|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | |
| win_c0000_s00_b02_t04_p008_a090_013191.ppm | • | • | • | | | | | • | -83.35 |
| win_c0000_s00_b02_t04_p008_a090_040495.ppm | • | • | • | | | | | • | -11.75 |
| win_c0000_s00_b02_t04_p008_a090_040891.ppm | • | • | • | | | | | • | -15.92 |
| win_c0000_s00_b02_t04_p008_a090_072894.ppm | • | • | • | | | | | • | 31.92 |
| win_c0000_s00_b02_t04_p008_a090_091390.ppm | • | • | • | | | | | • | 86.96 |
| win_c0000_s00_b02_t04_p008_a090_102294.ppm | • | • | • | | | | | • | -4.54 |
| win_c0000_s00_b02_t04_p008_a090_110590.ppm | • | • | • | | | | | • | 15.35 |
| win_c0000_s00_b02_t04_p008_a135_010595.ppm | • | • | • | | | | | • | -105.74 |
| win_c0000_s00_b02_t04_p008_a135_013191.ppm | • | • | • | | | | | • | -41.76 |
| win_c0000_s00_b02_t04_p008_a135_040495.ppm | • | • | • | | | | | • | 11.66 |
| win_c0000_s00_b02_t04_p008_a135_040891.ppm | • | • | • | | | | | • | 9.44 |
| win_c0000_s00_b02_t04_p008_a135_072894.ppm | • | • | • | | | | | • | 33.52 |
| win_c0000_s00_b02_t04_p008_a135_091390.ppm | • | • | • | | | | | • | 37.28 |
| win_c0000_s00_b02_t04_p008_a135_102294.ppm | • | • | • | | | | | • | -40.37 |
| win_c0000_s00_b02_t04_p008_a135_110590.ppm | • | • | • | | | | | • | -41.01 |
| win_c0000_s00_b02_t04_p008_a225_040495.ppm | • | • | • | | | | | • | -2.64 |
| win_c0000_s00_b02_t04_p008_a225_040891.ppm | • | • | • | | | | | • | 74.90 |
| win_c0000_s00_b02_t04_p008_a225_072894.ppm | • | • | • | | | | | • | 43.47 |
| win_c0000_s00_b02_t04_p008_a225_091390.ppm | • | • | • | | | | | • | 32.77 |
| win_c0000_s00_b02_t04_p008_a225_102294.ppm | • | • | • | | | | | • | -34.23 |
| win_c0000_s00_b02_t04_p008_a225_110690.ppm | • | • | • | | | | | • | -64.51 |
| win_c0000_s00_b02_t04_p008_a360_010595.ppm | • | • | • | | | | | • | -83.24 |
| win_c0000_s00_b02_t04_p008_a360_013191.ppm | • | • | • | | | | | • | -43.01 |
| win_c0000_s00_b02_t00_p019_a045_010595.ppm | • | | • | • | | • | | | -79.95 |
| win_c0000_s00_b02_t00_p019_a045_013191.ppm | • | | • | • | | • | | | -69.74 |
| win_c0000_s00_b02_t00_p019_a045_040495.ppm | • | | • | • | | • | | | 30.49 |
| win_c0000_s00_b02_t00_p019_a045_040891.ppm | • | | • | • | | • | | | 64.63 |
| win_c0000_s00_b02_t00_p019_a045_102294.ppm | • | | • | • | | • | | | -45.57 |
| win_c0000_s00_b02_t00_p019_a045_110590.ppm | • | | • | • | | • | | | -27.24 |
| win_c0000_s00_b02_t00_p019_a090_073094.ppm | • | | • | • | | • | | | 33.10 |
| win_c0000_s00_b02_t00_p019_a090_091490.ppm | • | | • | • | | • | | | 36.53 |
| win_c0000_s00_b02_t00_p019_a180_010595.ppm | • | | • | • | | • | | | -59.30 |
| win_c0000_s00_b02_t00_p019_a180_013191.ppm | • | | • | • | | • | | | -6.12 |

| Filename | Train | | | | Test | | | | SBE |
|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | |
| win_c0000_s00_b02_t00_p019_a180_040495.ppm | • | | • | • | | • | | | 15.53 |
| win_c0000_s00_b02_t00_p019_a180_040891.ppm | • | | • | • | | • | | | 25.54 |
| win_c0000_s00_b02_t00_p019_a180_073094.ppm | • | | • | • | | • | | | 65.80 |
| win_c0000_s00_b02_t00_p019_a180_091490.ppm | • | | • | • | | • | | | 106.91 |
| win_c0000_s00_b02_t00_p019_a180_102294.ppm | • | | • | • | | • | | | 0.37 |
| win_c0000_s00_b02_t00_p019_a180_110590.ppm | • | | • | • | | • | | | 29.15 |
| win_c0000_s00_b02_t00_p019_a225_040495.ppm | • | | • | • | | • | | | 31.14 |
| win_c0000_s00_b02_t00_p019_a225_040891.ppm | • | | • | • | | • | | | 72.71 |
| win_c0000_s00_b02_t00_p019_a225_073094.ppm | • | | • | • | | • | | | 69.20 |
| win_c0000_s00_b02_t00_p019_a225_091490.ppm | • | | • | • | | • | | | 107.13 |
| win_c0000_s00_b02_t00_p019_a225_102294.ppm | • | | • | • | | • | | | 19.05 |
| win_c0000_s00_b02_t00_p019_a225_110590.ppm | • | | • | • | | • | | | 43.30 |
| win_c0000_s00_b02_t00_p019_a270_010595.ppm | • | | • | • | | • | | | -59.67 |
| win_c0000_s00_b02_t00_p019_a270_013191.ppm | • | | • | • | | • | | | -61.80 |
| win_c0000_s00_b02_t00_p019_a270_040495.ppm | • | | • | • | | • | | | -31.18 |
| win_c0000_s00_b02_t00_p019_a270_040891.ppm | • | | • | • | | • | | | 77.64 |
| win_c0000_s00_b02_t00_p019_a270_102294.ppm | • | | • | • | | • | | | -18.79 |
| win_c0000_s00_b02_t00_p019_a270_110590.ppm | • | | • | • | | • | | | 36.87 |
| win_c0000_s00_b02_t00_p019_a360_010595.ppm | • | | • | • | | • | | | -56.10 |
| win_c0000_s00_b02_t00_p019_a360_013191.ppm | • | | • | • | | • | | | -68.55 |
| win_c0000_s00_b02_t00_p019_a360_073094.ppm | • | | • | • | | • | | | 23.99 |
| win_c0000_s00_b02_t00_p019_a360_091490.ppm | • | | • | • | | • | | | 62.57 |
| win_c0000_s00_b03_t02_p009_a040_040495.ppm | • | • | • | | | | | • | 17.82 |
| win_c0000_s00_b03_t02_p009_a040_040891.ppm | • | • | • | | | | | • | 40.60 |
| win_c0000_s00_b03_t02_p009_a040_102294.ppm | • | • | • | | | | | • | 58.30 |
| win_c0000_s00_b03_t02_p009_a040_110590.ppm | • | • | • | | | | | • | -2.90 |
| win_c0000_s00_b03_t02_p009_a085_010595.ppm | • | • | • | | | | | • | -88.91 |
| win_c0000_s00_b03_t02_p009_a085_013191.ppm | • | • | • | | | | | • | -38.41 |
| win_c0000_s00_b03_t02_p009_a085_102294.ppm | • | • | • | | | | | • | -24.40 |
| win_c0000_s00_b03_t02_p009_a085_110590.ppm | • | • | • | | | | | • | 18.56 |
| win_c0000_s00_b03_t02_p009_a130_040495.ppm | • | • | • | | | | | • | 8.07 |
| win_c0000_s00_b03_t02_p009_a130_040891.ppm | • | • | • | | | | | • | 41.22 |
| win_c0000_s00_b03_t02_p009_a175_040495.ppm | • | • | • | | | | | • | 69.45 |

| Filename | Train | | | | Test | | | | SBE |
|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | |
| win_c0000_s00_b03_t02_p009_a175_040891.ppm | • | • | • | | | | | • | 58.82 |
| win_c0000_s00_b03_t02_p009_a175_072595.ppm | • | • | • | | | | | • | 65.48 |
| win_c0000_s00_b03_t02_p009_a175_091390.ppm | • | • | • | | | | | • | 63.44 |
| win_c0000_s00_b03_t02_p009_a175_102294.ppm | • | • | • | | | | | • | 78.77 |
| win_c0000_s00_b03_t02_p009_a175_110590.ppm | • | • | • | | | | | • | 43.48 |
| win_c0000_s00_b03_t02_p009_a220_040495.ppm | • | • | • | | | | | • | -15.80 |
| win_c0000_s00_b03_t02_p009_a220_040891.ppm | • | • | • | | | | | • | -4.30 |
| win_c0000_s00_b03_t02_p009_a265_010595.ppm | • | • | • | | | | | • | -96.51 |
| win_c0000_s00_b03_t02_p009_a265_013191.ppm | • | • | • | | | | | • | -93.18 |
| win_c0000_s00_b03_t02_p009_a265_072595.ppm | • | • | • | | | | | • | 26.17 |
| win_c0000_s00_b03_t02_p009_a265_091390.ppm | • | • | • | | | | | • | 84.00 |
| win_c0000_s00_b03_t02_p009_a265_102294.ppm | • | • | • | | | | | • | 14.12 |
| win_c0000_s00_b03_t02_p009_a265_110590.ppm | • | • | • | | | | | • | 57.58 |
| win_c0000_s00_b03_t02_p009_a310_010595.ppm | • | • | • | | | | | • | 12.85 |
| win_c0000_s00_b03_t02_p009_a310_013191.ppm | • | • | • | | | | | • | -41.24 |
| win_c0000_s00_b03_t02_p009_a310_072595.ppm | • | • | • | | | | | • | 84.20 |
| win_c0000_s00_b03_t02_p009_a310_091390.ppm | • | • | • | | | | | • | 60.56 |
| win_c0000_s00_b03_t02_p009_a355_010595.ppm | • | • | • | | | | | • | -52.95 |
| win_c0000_s00_b03_t02_p009_a355_013191.ppm | • | • | • | | | | | • | -42.82 |
| win_c0000_s00_b03_t02_p009_a355_072595.ppm | • | • | • | | | | | • | 103.12 |
| win_c0000_s00_b03_t02_p009_a355_091390.ppm | • | • | • | | | | | • | 56.90 |
| win_c0000_s00_b03_t01_p010_a040_040495.ppm | • | | • | • | | • | | | 50.31 |
| win_c0000_s00_b03_t01_p010_a040_040891.ppm | • | | • | • | | • | | | -39.06 |
| win_c0000_s00_b03_t01_p010_a040_102294.ppm | • | | • | • | | • | | | 55.33 |
| win_c0000_s00_b03_t01_p010_a040_110590.ppm | • | | • | • | | • | | | -32.35 |
| win_c0000_s00_b03_t01_p010_a085_040495.ppm | • | | • | • | | • | | | 68.72 |
| win_c0000_s00_b03_t01_p010_a085_040891.ppm | • | | • | • | | • | | | 0.52 |
| win_c0000_s00_b03_t01_p010_a085_072994.ppm | • | | • | • | | • | | | 23.20 |
| win_c0000_s00_b03_t01_p010_a085_091390.ppm | • | | • | • | | • | | | 68.47 |
| win_c0000_s00_b03_t01_p010_a130_010795.ppm | • | | • | • | | • | | | 6.20 |
| win_c0000_s00_b03_t01_p010_a130_013191.ppm | • | | • | • | | • | | | -60.85 |
| win_c0000_s00_b03_t01_p010_a130_040495.ppm | • | | • | • | | • | | | 20.29 |
| win_c0000_s00_b03_t01_p010_a130_040891.ppm | • | | • | • | | • | | | -3.05 |

| Filename | Train | | | | Test | | | | SBE |
|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | |
| win_c0000_s00_b03_t01_p010_a130_072994.ppm | • | | • | • | | • | | | 60.01 |
| win_c0000_s00_b03_t01_p010_a130_091390.ppm | • | | • | • | | • | | | 27.36 |
| win_c0000_s00_b03_t01_p010_a175_102294.ppm | • | | • | • | | • | | | 32.87 |
| win_c0000_s00_b03_t01_p010_a175_110590.ppm | • | | • | • | | • | | | -18.11 |
| win_c0000_s00_b03_t01_p010_a220_102294.ppm | • | | • | • | | • | | | 13.87 |
| win_c0000_s00_b03_t01_p010_a220_110590.ppm | • | | • | • | | • | | | -7.66 |
| win_c0000_s00_b03_t01_p010_a265_010795.ppm | • | | • | • | | • | | | -13.27 |
| win_c0000_s00_b03_t01_p010_a265_013191.ppm | • | | • | • | | • | | | 23.00 |
| win_c0000_s00_b03_t01_p010_a265_040495.ppm | • | | • | • | | • | | | 15.00 |
| win_c0000_s00_b03_t01_p010_a265_040891.ppm | • | | • | • | | • | | | 59.60 |
| win_c0000_s00_b03_t01_p010_a265_102294.ppm | • | | • | • | | • | | | 24.55 |
| win_c0000_s00_b03_t01_p010_a265_110590.ppm | • | | • | • | | • | | | 0.87 |
| win_c0000_s00_b03_t01_p010_a310_010795.ppm | • | | • | • | | • | | | 36.16 |
| win_c0000_s00_b03_t01_p010_a310_013191.ppm | • | | • | • | | • | | | -9.07 |
| win_c0000_s00_b03_t01_p010_a310_091390.ppm | • | | • | • | | • | | | 51.78 |
| win_c0000_s00_b03_t01_p010_a355_010595.ppm | • | | • | • | | • | | | 21.22 |
| win_c0000_s00_b03_t01_p010_a355_013191.ppm | • | | • | • | | • | | | -3.58 |
| win_c0000_s00_b03_t01_p010_a355_072994.ppm | • | | • | • | | • | | | 68.43 |
| win_c0000_s00_b03_t01_p010_a355_091390.ppm | • | | • | • | | • | | | 25.67 |
| win_c0000_s00_b03_t03_p011_a040_102394.ppm | • | • | | • | | | • | | -9.38 |
| win_c0000_s00_b03_t03_p011_a040_110590.ppm | • | • | | • | | | • | | -46.45 |
| win_c0000_s00_b03_t03_p011_a085_040495.ppm | • | • | | • | | | • | | 18.50 |
| win_c0000_s00_b03_t03_p011_a085_040891.ppm | • | • | | • | | | • | | 8.24 |
| win_c0000_s00_b03_t03_p011_a085_072994.ppm | • | • | | • | | | • | | 60.93 |
| win_c0000_s00_b03_t03_p011_a085_091490.ppm | • | • | | • | | | • | | 30.09 |
| win_c0000_s00_b03_t03_p011_a085_102394.ppm | • | • | | • | | | • | | 50.41 |
| win_c0000_s00_b03_t03_p011_a085_110590.ppm | • | • | | • | | | • | | 11.87 |
| win_c0000_s00_b03_t03_p011_a130_040495.ppm | • | • | | • | | | • | | -50.02 |
| win_c0000_s00_b03_t03_p011_a130_040891.ppm | • | • | | • | | | • | | -63.25 |
| win_c0000_s00_b03_t03_p011_a175_010595.ppm | • | • | | • | | | • | | -69.43 |
| win_c0000_s00_b03_t03_p011_a175_013191.ppm | • | • | | • | | | • | | -90.00 |
| win_c0000_s00_b03_t03_p011_a175_040495.ppm | • | • | | • | | | • | | 2.75 |
| win_c0000_s00_b03_t03_p011_a175_040891.ppm | • | • | | • | | | • | | 11.01 |

| Filename | Train | | | | Test | | | | SBE |
|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | |
| win_c0000_s00_b03_t03_p011_a175_102394.ppm | • | • | | • | | | • | | -12.02 |
| win_c0000_s00_b03_t03_p011_a175_110590.ppm | • | • | | • | | | • | | 30.01 |
| win_c0000_s00_b03_t03_p011_a220_010595.ppm | • | • | | • | | | • | | -47.45 |
| win_c0000_s00_b03_t03_p011_a220_013191.ppm | • | • | | • | | | • | | -48.91 |
| win_c0000_s00_b03_t03_p011_a220_040495.ppm | • | • | | • | | | • | | -64.94 |
| win_c0000_s00_b03_t03_p011_a220_040891.ppm | • | • | | • | | | • | | 4.42 |
| win_c0000_s00_b03_t03_p011_a220_102394.ppm | • | • | | • | | | • | | 2.00 |
| win_c0000_s00_b03_t03_p011_a220_110590.ppm | • | • | | • | | | • | | -38.47 |
| win_c0000_s00_b03_t03_p011_a265_010595.ppm | • | • | | • | | | • | | -97.04 |
| win_c0000_s00_b03_t03_p011_a265_013191.ppm | • | • | | • | | | • | | -92.94 |
| win_c0000_s00_b03_t03_p011_a265_072994.ppm | • | • | | • | | | • | | 72.16 |
| win_c0000_s00_b03_t03_p011_a265_091490.ppm | • | • | | • | | | • | | 21.91 |
| win_c0000_s00_b03_t03_p011_a310_010595.ppm | • | • | | • | | | • | | -57.95 |
| win_c0000_s00_b03_t03_p011_a310_013191.ppm | • | • | | • | | | • | | -49.96 |
| win_c0000_s00_b03_t03_p011_a310_072994.ppm | • | • | | • | | | • | | 44.69 |
| win_c0000_s00_b03_t03_p011_a310_091490.ppm | • | • | | • | | | • | | -6.58 |
| win_c0000_s00_b03_t03_p011_a355_072994.ppm | • | • | | • | | | • | | 75.90 |
| win_c0000_s00_b03_t03_p011_a355_091490.ppm | • | • | | • | | | • | | 32.76 |
| win_c0000_s00_b03_t04_p012_a040_010595.ppm | | • | • | • | • | | | | -28.24 |
| win_c0000_s00_b03_t04_p012_a040_013191.ppm | | • | • | • | • | | | | -38.90 |
| win_c0000_s00_b03_t04_p012_a040_072994.ppm | | • | • | • | • | | | | 65.76 |
| win_c0000_s00_b03_t04_p012_a040_091490.ppm | | • | • | • | • | | | | 88.89 |
| win_c0000_s00_b03_t04_p012_a040_102394.ppm | | • | • | • | • | | | | 10.56 |
| win_c0000_s00_b03_t04_p012_a040_110590.ppm | | • | • | • | • | | | | -43.53 |
| win_c0000_s00_b03_t04_p012_a085_040495.ppm | | • | • | • | • | | | | 22.54 |
| win_c0000_s00_b03_t04_p012_a085_040891.ppm | | • | • | • | • | | | | 12.79 |
| win_c0000_s00_b03_t04_p012_a085_072994.ppm | | • | • | • | • | | | | 27.98 |
| win_c0000_s00_b03_t04_p012_a085_091490.ppm | | • | • | • | • | | | | -12.46 |
| win_c0000_s00_b03_t04_p012_a130_102394.ppm | | • | • | • | • | | | | 51.67 |
| win_c0000_s00_b03_t04_p012_a130_110590.ppm | | • | • | • | • | | | | 37.58 |
| win_c0000_s00_b03_t04_p012_a175_010595.ppm | | • | • | • | • | | | | -68.53 |
| win_c0000_s00_b03_t04_p012_a175_013191.ppm | | • | • | • | • | | | | -61.73 |
| win_c0000_s00_b03_t04_p012_a175_102394.ppm | | • | • | • | • | | | | -53.17 |

| Filename | Train | | | | Test | | | | SBE |
|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | |
| win_c0000_s00_b03_t04_p012_a175_110590.ppm | | • | • | • | • | | | | 27.00 |
| win_c0000_s00_b03_t04_p012_a220_010595.ppm | | • | • | • | • | | | | -20.47 |
| win_c0000_s00_b03_t04_p012_a220_013191.ppm | | • | • | • | • | | | | -49.61 |
| win_c0000_s00_b03_t04_p012_a220_040495.ppm | | • | • | • | • | | | | 36.80 |
| win_c0000_s00_b03_t04_p012_a220_040891.ppm | | • | • | • | • | | | | 28.40 |
| win_c0000_s00_b03_t04_p012_a220_072994.ppm | | • | • | • | • | | | | 48.98 |
| win_c0000_s00_b03_t04_p012_a220_091490.ppm | | • | • | • | • | | | | 78.31 |
| win_c0000_s00_b03_t04_p012_a265_010595.ppm | | • | • | • | • | | | | -55.06 |
| win_c0000_s00_b03_t04_p012_a265_013191.ppm | | • | • | • | • | | | | -71.28 |
| win_c0000_s00_b03_t04_p012_a265_040495.ppm | | • | • | • | • | | | | 38.77 |
| win_c0000_s00_b03_t04_p012_a265_040891.ppm | | • | • | • | • | | | | 62.27 |
| win_c0000_s00_b03_t04_p012_a265_102394.ppm | | • | • | • | • | | | | 53.47 |
| win_c0000_s00_b03_t04_p012_a265_110590.ppm | | • | • | • | • | | | | -18.05 |
| win_c0000_s00_b03_t04_p012_a310_040495.ppm | | • | • | • | • | | | | 5.71 |
| win_c0000_s00_b03_t04_p012_a310_040891.ppm | | • | • | • | • | | | | 25.54 |
| win_c0000_s00_b03_t04_p012_a310_072994.ppm | | • | • | • | • | | | | 61.88 |
| win_c0000_s00_b03_t04_p012_a310_091490.ppm | | • | • | • | • | | | | 83.90 |
| win_c0000_s00_b03_t00_p018_a040_010595.ppm | | • | • | • | • | | | | -25.85 |
| win_c0000_s00_b03_t00_p018_a040_013191.ppm | | • | • | • | • | | | | -39.31 |
| win_c0000_s00_b03_t00_p018_a040_073094.ppm | | • | • | • | • | | | | 72.96 |
| win_c0000_s00_b03_t00_p018_a040_091490.ppm | | • | • | • | • | | | | 103.39 |
| win_c0000_s00_b03_t00_p018_a040_102394.ppm | | • | • | • | • | | | | 18.66 |
| win_c0000_s00_b03_t00_p018_a040_110590.ppm | | • | • | • | • | | | | -30.34 |
| win_c0000_s00_b03_t00_p018_a085_010595.ppm | | • | • | • | • | | | | -17.25 |
| win_c0000_s00_b03_t00_p018_a085_013191.ppm | | • | • | • | • | | | | -58.26 |
| win_c0000_s00_b03_t00_p018_a085_040495.ppm | | • | • | • | • | | | | -6.85 |
| win_c0000_s00_b03_t00_p018_a085_040891.ppm | | • | • | • | • | | | | 63.78 |
| win_c0000_s00_b03_t00_p018_a085_102394.ppm | | • | • | • | • | | | | 35.60 |
| win_c0000_s00_b03_t00_p018_a085_110590.ppm | | • | • | • | • | | | | -4.21 |
| win_c0000_s00_b03_t00_p018_a130_040495.ppm | | • | • | • | • | | | | 37.95 |
| win_c0000_s00_b03_t00_p018_a130_040891.ppm | | • | • | • | • | | | | 60.54 |
| win_c0000_s00_b03_t00_p018_a130_073094.ppm | | • | • | • | • | | | | 77.75 |
| win_c0000_s00_b03_t00_p018_a130_091490.ppm | | • | • | • | • | | | | 49.75 |

| Filename | Train | | | | Test | | | | SBE |
|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | |
| win_c0000_s00_b03_t00_p018_a175_010595.ppm | | • | • | • | • | | | | -37.33 |
| win_c0000_s00_b03_t00_p018_a175_013191.ppm | | • | • | • | • | | | | -33.03 |
| win_c0000_s00_b03_t00_p018_a175_040495.ppm | | • | • | • | • | | | | -31.80 |
| win_c0000_s00_b03_t00_p018_a175_040891.ppm | | • | • | • | • | | | | 77.51 |
| win_c0000_s00_b03_t00_p018_a175_073094.ppm | | • | • | • | • | | | | 39.24 |
| win_c0000_s00_b03_t00_p018_a175_091490.ppm | | • | • | • | • | | | | 62.78 |
| win_c0000_s00_b03_t00_p018_a175_102394.ppm | | • | • | • | • | | | | 3.99 |
| win_c0000_s00_b03_t00_p018_a175_110590.ppm | | • | • | • | • | | | | 15.72 |
| win_c0000_s00_b03_t00_p018_a220_102394.ppm | | • | • | • | • | | | | 28.92 |
| win_c0000_s00_b03_t00_p018_a220_110590.ppm | | • | • | • | • | | | | -24.15 |
| win_c0000_s00_b03_t00_p018_a265_040495.ppm | | • | • | • | • | | | | 28.06 |
| win_c0000_s00_b03_t00_p018_a265_040891.ppm | | • | • | • | • | | | | 49.08 |
| win_c0000_s00_b03_t00_p018_a310_010595.ppm | | • | • | • | • | | | | -12.82 |
| win_c0000_s00_b03_t00_p018_a310_013191.ppm | | • | • | • | • | | | | -35.25 |
| win_c0000_s00_b03_t00_p018_a310_073094.ppm | | • | • | • | • | | | | 43.57 |
| win_c0000_s00_b03_t00_p018_a310_091490.ppm | | • | • | • | • | | | | 62.56 |
| win_c0000_s00_b04_t03_p013_a015_010795.ppm | | • | • | • | • | | | | -43.75 |
| win_c0000_s00_b04_t03_p013_a015_013191.ppm | | • | • | • | • | | | | -21.11 |
| win_c0000_s00_b04_t03_p013_a015_040495.ppm | | • | • | • | • | | | | -103.42 |
| win_c0000_s00_b04_t03_p013_a015_040991.ppm | | • | • | • | • | | | | -49.94 |
| win_c0000_s00_b04_t03_p013_a015_073094.ppm | | • | • | • | • | | | | 0.32 |
| win_c0000_s00_b04_t03_p013_a015_091490.ppm | | • | • | • | • | | | | 19.94 |
| win_c0000_s00_b04_t03_p013_a015_102394.ppm | | • | • | • | • | | | | -73.90 |
| win_c0000_s00_b04_t03_p013_a015_110590.ppm | | • | • | • | • | | | | -30.52 |
| win_c0000_s00_b04_t03_p013_a060_040495.ppm | | • | • | • | • | | | | -53.76 |
| win_c0000_s00_b04_t03_p013_a060_040991.ppm | | • | • | • | • | | | | -18.11 |
| win_c0000_s00_b04_t03_p013_a060_073094.ppm | | • | • | • | • | | | | 25.72 |
| win_c0000_s00_b04_t03_p013_a060_091490.ppm | | • | • | • | • | | | | 45.03 |
| win_c0000_s00_b04_t03_p013_a060_102394.ppm | | • | • | • | • | | | | -16.98 |
| win_c0000_s00_b04_t03_p013_a060_110590.ppm | | • | • | • | • | | | | -38.75 |
| win_c0000_s00_b04_t03_p013_a105_010795.ppm | | • | • | • | • | | | | -28.59 |
| win_c0000_s00_b04_t03_p013_a105_013191.ppm | | • | • | • | • | | | | -50.50 |
| win_c0000_s00_b04_t03_p013_a150_040495.ppm | | • | • | • | • | | | | -56.34 |

| Filename | Train | | | | Test | | | | SBE |
|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | |
| win_c0000_s00_b04_t03_p013_a150_040991.ppm | | • | • | • | • | | | | -11.97 |
| win_c0000_s00_b04_t03_p013_a195_040595.ppm | | • | • | • | • | | | | -16.46 |
| win_c0000_s00_b04_t03_p013_a195_040991.ppm | | • | • | • | • | | | | -28.42 |
| win_c0000_s00_b04_t03_p013_a240_010795.ppm | | • | • | • | • | | | | -60.09 |
| win_c0000_s00_b04_t03_p013_a240_013191.ppm | | • | • | • | • | | | | -50.82 |
| win_c0000_s00_b04_t03_p013_a240_073094.ppm | | • | • | • | • | | | | 72.33 |
| win_c0000_s00_b04_t03_p013_a240_091490.ppm | | • | • | • | • | | | | 8.79 |
| win_c0000_s00_b04_t03_p013_a240_102394.ppm | | • | • | • | • | | | | -25.94 |
| win_c0000_s00_b04_t03_p013_a240_110590.ppm | | • | • | • | • | | | | -46.86 |
| win_c0000_s00_b04_t03_p013_a285_102394.ppm | | • | • | • | • | | | | -24.31 |
| win_c0000_s00_b04_t03_p013_a285_110590.ppm | | • | • | • | • | | | | -14.67 |
| win_c0000_s00_b04_t03_p013_a330_010795.ppm | | • | • | • | • | | | | -93.30 |
| win_c0000_s00_b04_t03_p013_a330_013191.ppm | | • | • | • | • | | | | -82.31 |
| win_c0000_s00_b04_t03_p013_a330_073094.ppm | | • | • | • | • | | | | 25.43 |
| win_c0000_s00_b04_t03_p013_a330_091490.ppm | | • | • | • | • | | | | 16.93 |
| win_c0000_s00_b04_t02_p014_a015_010795.ppm | • | | • | • | | • | | | -51.93 |
| win_c0000_s00_b04_t02_p014_a015_013191.ppm | • | | • | • | | • | | | -81.95 |
| win_c0000_s00_b04_t02_p014_a060_010795.ppm | • | | • | • | | • | | | 8.63 |
| win_c0000_s00_b04_t02_p014_a060_013191.ppm | • | | • | • | | • | | | -50.23 |
| win_c0000_s00_b04_t02_p014_a060_040495.ppm | • | | • | • | | • | | | -32.35 |
| win_c0000_s00_b04_t02_p014_a060_040991.ppm | • | | • | • | | • | | | -8.20 |
| win_c0000_s00_b04_t02_p014_a060_102394.ppm | • | | • | • | | • | | | 8.30 |
| win_c0000_s00_b04_t02_p014_a060_110590.ppm | • | | • | • | | • | | | -37.32 |
| win_c0000_s00_b04_t02_p014_a150_010795.ppm | • | | • | • | | • | | | -45.04 |
| win_c0000_s00_b04_t02_p014_a150_013191.ppm | • | | • | • | | • | | | -58.53 |
| win_c0000_s00_b04_t02_p014_a150_040495.ppm | • | | • | • | | • | | | 36.64 |
| win_c0000_s00_b04_t02_p014_a150_040991.ppm | • | | • | • | | • | | | 27.96 |
| win_c0000_s00_b04_t02_p014_a150_073094.ppm | • | | • | • | | • | | | 53.66 |
| win_c0000_s00_b04_t02_p014_a150_091490.ppm | • | | • | • | | • | | | 26.24 |
| win_c0000_s00_b04_t02_p014_a150_102294.ppm | • | | • | • | | • | | | -21.65 |
| win_c0000_s00_b04_t02_p014_a150_110590.ppm | • | | • | • | | • | | | -26.87 |
| win_c0000_s00_b04_t02_p014_a195_010795.ppm | • | | • | • | | • | | | -26.50 |
| win_c0000_s00_b04_t02_p014_a195_013191.ppm | • | | • | • | | • | | | -3.98 |

| Filename | Train | | | | Test | | | | SBE |
|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | |
| win_c0000_s00_b04_t02_p014_a195_040495.ppm | • | | • | • | | • | | | -59.37 |
| win_c0000_s00_b04_t02_p014_a195_040991.ppm | • | | • | • | | • | | | 20.56 |
| win_c0000_s00_b04_t02_p014_a195_073094.ppm | • | | • | • | | • | | | 7.51 |
| win_c0000_s00_b04_t02_p014_a195_091490.ppm | • | | • | • | | • | | | 2.79 |
| win_c0000_s00_b04_t02_p014_a195_102394.ppm | • | | • | • | | • | | | 4.60 |
| win_c0000_s00_b04_t02_p014_a195_110590.ppm | • | | • | • | | • | | | 65.91 |
| win_c0000_s00_b04_t02_p014_a240_102394.ppm | • | | • | • | | • | | | -28.58 |
| win_c0000_s00_b04_t02_p014_a240_110590.ppm | • | | • | • | | • | | | -2.84 |
| win_c0000_s00_b04_t02_p014_a285_040495.ppm | • | | • | • | | • | | | -2.30 |
| win_c0000_s00_b04_t02_p014_a285_040991.ppm | • | | • | • | | • | | | -16.19 |
| win_c0000_s00_b04_t02_p014_a285_073094.ppm | • | | • | • | | • | | | 28.97 |
| win_c0000_s00_b04_t02_p014_a285_091490.ppm | • | | • | • | | • | | | -3.80 |
| win_c0000_s00_b04_t02_p014_a330_073094.ppm | • | | • | • | | • | | | 25.66 |
| win_c0000_s00_b04_t02_p014_a330_091490.ppm | • | | • | • | | • | | | 13.72 |
| win_c0000_s00_b04_t01_p015_a015_040495.ppm | • | • | • | | | | | • | -64.34 |
| win_c0000_s00_b04_t01_p015_a015_040891.ppm | • | • | • | | | | | • | -14.96 |
| win_c0000_s00_b04_t01_p015_a015_073094.ppm | • | • | • | | | | | • | 15.05 |
| win_c0000_s00_b04_t01_p015_a015_091490.ppm | • | • | • | | | | | • | -37.25 |
| win_c0000_s00_b04_t01_p015_a060_010795.ppm | • | • | • | | | | | • | -98.90 |
| win_c0000_s00_b04_t01_p015_a060_013191.ppm | • | • | • | | | | | • | -117.45 |
| win_c0000_s00_b04_t01_p015_a060_102394.ppm | • | • | • | | | | | • | -106.71 |
| win_c0000_s00_b04_t01_p015_a060_110590.ppm | • | • | • | | | | | • | -97.78 |
| win_c0000_s00_b04_t01_p015_a105_040495.ppm | • | • | • | | | | | • | -48.07 |
| win_c0000_s00_b04_t01_p015_a105_040891.ppm | • | • | • | | | | | • | -10.39 |
| win_c0000_s00_b04_t01_p015_a105_102294.ppm | • | • | • | | | | | • | 0.45 |
| win_c0000_s00_b04_t01_p015_a105_110590.ppm | • | • | • | | | | | • | -34.09 |
| win_c0000_s00_b04_t01_p015_a150_010795.ppm | • | • | • | | | | | • | -37.40 |
| win_c0000_s00_b04_t01_p015_a150_013191.ppm | • | • | • | | | | | • | -5.91 |
| win_c0000_s00_b04_t01_p015_a150_040495.ppm | • | • | • | | | | | • | -6.03 |
| win_c0000_s00_b04_t01_p015_a150_040891.ppm | • | • | • | | | | | • | 13.71 |
| win_c0000_s00_b04_t01_p015_a150_073094.ppm | • | • | • | | | | | • | 43.22 |
| win_c0000_s00_b04_t01_p015_a150_091490.ppm | • | • | • | | | | | • | 57.79 |
| win_c0000_s00_b04_t01_p015_a150_102394.ppm | • | • | • | | | | | • | 24.34 |

| Filename | Train | | | | Test | | | | SBE |
|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | |
| win_c0000_s00_b04_t01_p015_a150_110590.ppm | • | • | • | | | | | • | -24.69 |
| win_c0000_s00_b04_t01_p015_a195_010795.ppm | • | • | • | | | | | • | -57.80 |
| win_c0000_s00_b04_t01_p015_a195_013191.ppm | • | • | • | | | | | • | -40.16 |
| win_c0000_s00_b04_t01_p015_a195_040495.ppm | • | • | • | | | | | • | 17.93 |
| win_c0000_s00_b04_t01_p015_a195_040891.ppm | • | • | • | | | | | • | 7.38 |
| win_c0000_s00_b04_t01_p015_a195_073094.ppm | • | • | • | | | | | • | 66.62 |
| win_c0000_s00_b04_t01_p015_a195_091490.ppm | • | • | • | | | | | • | 21.41 |
| win_c0000_s00_b04_t01_p015_a240_010795.ppm | • | • | • | | | | | • | -77.34 |
| win_c0000_s00_b04_t01_p015_a240_013191.ppm | • | • | • | | | | | • | -19.86 |
| win_c0000_s00_b04_t01_p015_a285_102394.ppm | • | • | • | | | | | • | -12.10 |
| win_c0000_s00_b04_t01_p015_a285_110690.ppm | • | • | • | | | | | • | -24.53 |
| win_c0000_s00_b04_t01_p015_a330_073094.ppm | • | • | • | | | | | • | 11.88 |
| win_c0000_s00_b04_t01_p015_a330_091490.ppm | • | • | • | | | | | • | 9.59 |
| win_c0000_s00_b04_t04_p016_a015_040495.ppm | • | • | | • | | | • | | -37.60 |
| win_c0000_s00_b04_t04_p016_a015_040991.ppm | • | • | | • | | | • | | 1.72 |
| win_c0000_s00_b04_t04_p016_a015_073094.ppm | • | • | | • | | | • | | 46.96 |
| win_c0000_s00_b04_t04_p016_a015_091490.ppm | • | • | | • | | | • | | 54.29 |
| win_c0000_s00_b04_t04_p016_a015_102394.ppm | • | • | | • | | | • | | 24.70 |
| win_c0000_s00_b04_t04_p016_a015_110590.ppm | • | • | | • | | | • | | -19.38 |
| win_c0000_s00_b04_t04_p016_a060_010795.ppm | • | • | | • | | | • | | -11.91 |
| win_c0000_s00_b04_t04_p016_a060_013191.ppm | • | • | | • | | | • | | -26.16 |
| win_c0000_s00_b04_t04_p016_a105_010795.ppm | • | • | | • | | | • | | -62.52 |
| win_c0000_s00_b04_t04_p016_a105_013191.ppm | • | • | | • | | | • | | 1.69 |
| win_c0000_s00_b04_t04_p016_a150_010795.ppm | • | • | | • | | | • | | -53.03 |
| win_c0000_s00_b04_t04_p016_a150_013191.ppm | • | • | | • | | | • | | -57.12 |
| win_c0000_s00_b04_t04_p016_a150_073094.ppm | • | • | | • | | | • | | 18.57 |
| win_c0000_s00_b04_t04_p016_a150_091490.ppm | • | • | | • | | | • | | 9.87 |
| win_c0000_s00_b04_t04_p016_a195_010795.ppm | • | • | | • | | | • | | -47.20 |
| win_c0000_s00_b04_t04_p016_a195_013191.ppm | • | • | | • | | | • | | 10.75 |
| win_c0000_s00_b04_t04_p016_a195_073094.ppm | • | • | | • | | | • | | 49.90 |
| win_c0000_s00_b04_t04_p016_a195_091490.ppm | • | • | | • | | | • | | 46.53 |
| win_c0000_s00_b04_t04_p016_a240_040495.ppm | • | • | | • | | | • | | 4.66 |
| win_c0000_s00_b04_t04_p016_a240_040991.ppm | • | • | | • | | | • | | 0.35 |

| Filename | Train | | | | Test | | | | SBE |
|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | |
| win_c0000_s00_b04_t04_p016_a240_073094.ppm | • | • | | • | | | • | | 54.07 |
| win_c0000_s00_b04_t04_p016_a240_091490.ppm | • | • | | • | | | • | | 78.06 |
| win_c0000_s00_b04_t04_p016_a240_102394.ppm | • | • | | • | | | • | | 6.04 |
| win_c0000_s00_b04_t04_p016_a240_110590.ppm | • | • | | • | | | • | | -40.33 |
| win_c0000_s00_b04_t04_p016_a285_040495.ppm | • | • | | • | | | • | | -92.60 |
| win_c0000_s00_b04_t04_p016_a285_040991.ppm | • | • | | • | | | • | | -69.19 |
| win_c0000_s00_b04_t04_p016_a285_102394.ppm | • | • | | • | | | • | | -16.71 |
| win_c0000_s00_b04_t04_p016_a285_110590.ppm | • | • | | • | | | • | | -23.15 |
| win_c0000_s00_b04_t04_p016_a330_040495.ppm | • | • | | • | | | • | | -19.46 |
| win_c0000_s00_b04_t04_p016_a330_040991.ppm | • | • | | • | | | • | | -4.61 |
| win_c0000_s00_b04_t04_p016_a330_102394.ppm | • | • | | • | | | • | | 16.48 |
| win_c0000_s00_b04_t04_p016_a330_110590.ppm | • | • | | • | | | • | | -15.24 |
| win_c0000_s00_b04_t00_p017_a030_010795.ppm | • | • | • | | | | | • | 30.32 |
| win_c0000_s00_b04_t00_p017_a030_013191.ppm | • | • | • | | | | | • | 11.23 |
| win_c0000_s00_b04_t00_p017_a075_010795.ppm | • | • | • | | | | | • | 6.40 |
| win_c0000_s00_b04_t00_p017_a075_013191.ppm | • | • | • | | | | | • | 16.74 |
| win_c0000_s00_b04_t00_p017_a075_040495.ppm | • | • | • | | | | | • | 2.89 |
| win_c0000_s00_b04_t00_p017_a075_040991.ppm | • | • | • | | | | | • | 42.37 |
| win_c0000_s00_b04_t00_p017_a075_073094.ppm | • | • | • | | | | | • | 26.55 |
| win_c0000_s00_b04_t00_p017_a075_102390.ppm | • | • | • | | | | | • | 83.71 |
| win_c0000_s00_b04_t00_p017_a075_102394.ppm | • | • | • | | | | | • | 30.02 |
| win_c0000_s00_b04_t00_p017_a075_110590.ppm | • | • | • | | | | | • | 36.64 |
| win_c0000_s00_b04_t00_p017_a120_010795.ppm | • | • | • | | | | | • | 10.53 |
| win_c0000_s00_b04_t00_p017_a120_013191.ppm | • | • | • | | | | | • | -37.05 |
| win_c0000_s00_b04_t00_p017_a120_040495.ppm | • | • | • | | | | | • | 1.50 |
| win_c0000_s00_b04_t00_p017_a120_040991.ppm | • | • | • | | | | | • | 49.09 |
| win_c0000_s00_b04_t00_p017_a120_073094.ppm | • | • | • | | | | | • | 39.64 |
| win_c0000_s00_b04_t00_p017_a120_102390.ppm | • | • | • | | | | | • | 48.43 |
| win_c0000_s00_b04_t00_p017_a120_102394.ppm | • | • | • | | | | | • | 6.07 |
| win_c0000_s00_b04_t00_p017_a120_110590.ppm | • | • | • | | | | | • | 77.96 |
| win_c0000_s00_b04_t00_p017_a165_040495.ppm | • | • | • | | | | | • | 1.30 |
| win_c0000_s00_b04_t00_p017_a165_040991.ppm | • | • | • | | | | | • | 44.50 |
| win_c0000_s00_b04_t00_p017_a210_040495.ppm | • | • | • | | | | | • | -26.57 |

| Filename | Train | | | | Test | | | | SBE |
|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | |
| win_c0000_s00_b04_t00_p017_a210_040991.ppm | • | • | • | | | | | • | -7.03 |
| win_c0000_s00_b04_t00_p017_a210_073094.ppm | • | • | • | | | | | • | 45.30 |
| win_c0000_s00_b04_t00_p017_a210_102390.ppm | • | • | • | | | | | • | 1.44 |
| win_c0000_s00_b04_t00_p017_a210_102394.ppm | • | • | • | | | | | • | 8.29 |
| win_c0000_s00_b04_t00_p017_a210_110590.ppm | • | • | • | | | | | • | 13.19 |
| win_c0000_s00_b04_t00_p017_a255_010795.ppm | • | • | • | | | | | • | -64.72 |
| win_c0000_s00_b04_t00_p017_a255_013191.ppm | • | • | • | | | | | • | -74.47 |
| win_c0000_s00_b04_t00_p017_a255_072994.ppm | • | • | • | | | | | • | 44.65 |
| win_c0000_s00_b04_t00_p017_a255_102390.ppm | • | • | • | | | | | • | 85.61 |
| win_c0000_s00_b04_t00_p017_a255_102394.ppm | • | • | • | | | | | • | -95.29 |
| win_c0000_s00_b04_t00_p017_a255_110590.ppm | • | • | • | | | | | • | 27.40 |