Help and Information
helpful - Context related help on the PLS_Toolbox.
readme - Release notes for Version 4.1 of PLS_Toolbox.
demos - Demo list for the PLS_Toolbox.
evricompatibility - Tests for inter-product compatibility of Eigenvector toolboxes.
evridebug - Checks the PLS_Toolbox installation for problems.
evridor - Locate and or create EVRI home directory.
evrinstall - Install Eigenvector Research Product.
evrunload - Uninstall an Eigenvector Research toolbox.
evrupdatr - Check Eigenvector.com for available PLS_Toolbox updates.
plsv - Displays version information.

Plotting Analysis Aids and I/O Functions
abline - Draws a line on the current axes with a given slope and intercept.
analysis - Graphical user interface for data analysis.
aed - Reads ascii data and strips header.
autoexport - Exports a DataSet object to a file of the specified format.
autoimport - Automatically reads specified file. Handles all standard filetypes.
b3spline - Univariate spline fit and prediction.
boxplot - Box plot of a data matrix.
buildpptr - Builds a database connection string.
dp - Draws a diagonal line on an existing figure.
eclipse - Plots an ellipse on an existing figure.
explode - Extracts variables from a structure array.
exportfigure - Automatically exports figures to an external program.
figuretheme - Resets a figure background and axes color.
getdia - Uses the current PI connection to construct a DSO.
gselect - Selects objects in a figure (various selection styles).
hrjreadd - Reads HORIBA Jobin Yvon files (Windows Only).
hline - Adds horizontal lines to figure at specified locations.
infoobj - Display a string in an information box.
loqfileread - An example function for reading files in a loop.
mplot - Automatic creation of subplots and plotting.
mtfread - Read AdventaCT Multi-Trace Format (MTF) files.
parsemixed - Parse numerical and text data into a DataSet Object.
pcolormap - Pseudocolor plot with labels and colorbar.
plot2d - Builds dataset object of eigenvalues/RMSECV information.

Data Editing Scaling and Preprocessing
alignmat - Alignment of matrices and N-way arrays.
alignpeaks - Calibrates wavelength scale using standard peaks.
alignspectra - Calibrates wavelength scale using standard spectrum.
auto - Autoscales matrix to mean zero unit variance.
baseline - Subtracts a polynomial baseline offset from spectra.
baselinew - Baseline using windowed polynomial filter.
batchdigest - Parse wafer or batch data into MPCA or Summary PCA form.
classcenter - Centers classes in data to the mean of each class.
coadd - Reduce resolution through combination of adjacent variables or samples.
delsamps - Deletes samples (rows) or variables (columns) from data matrices.
deresolv - Changes high resolution spectra to low resolution.
editds - Editor for DataSet Objects.
excludemissing - Automatically exclude too-much missing data in a matrix.
gsw - Generalized least-squares weighting/preprocessing.
gscale - Group/block scaling for a single or multiple blocks.
gscale - Applies group/block scaling to submatrices of a single matrix.
lamsel - Determines indices of wavelength axes in specified ranges.
Statistics, ANOVA, Experimental Design + cont...

doerinteractions - Calculates interaction terms of a raw DOE matrix.
doerunsheet - Create a doe run sheet.
doescale - Convert coded DOE to scaled DOE or scaled back to coded.
doimal - Selects samples based on D-Optimal criteria.
durbin_watson - Criterion for measure of contingency.
exeriorpts - Selects samples on outside of data space after normalizing data.
factdes - Full factorial design of experiments.
ffacconfusion - Generates confusion table for a fractional factorial DOE.
ffacdes1 - Fractional factorial design of experiments.
ftest - F test and inverse F test statistic.
halfnormplot - Produce Half-Normal or Normal plot from DOE dataset object.
percentile - Finds percentile point (similar to MEDIAN).
reducenamples - Selects a subset of samples by removing nearest neighbors.
stdsslect - Selects data subsets (often for use in standardization).
ttestp - Evaluates t-distribution and its inverse.

Principal Components Analysis

chilimit - Chi-squared confidence limits from sum-of-squares residuals.
datamat - Calculates the model estimate and residuals of the data.
estimatefactors - Estimate number of significant factors in multivariate data.
jmlimit - Confidence limits for Q residuals via Jackson-Mudholkar.
knscoredistance - Calculate the average distance to the k-Nearest Neighbors in score space.
manrotate - Graphical interface to manually rotate model loadings.
mlpca - Maximum likelihood principal components analysis.
 pca - Principal components analysis.
 pcaengine - Principal Components Analysis computational engine.
pcaproj - Projects new data on old principal components model.
plotloads - Extract and display loadings information from a model structure.
plotscors - Extract and display score information from a model.
residuallimit - Estimates confidence limits for sum squared residuals.
ssqtable - Displays variance captured table for model.
subgrouplcl - Displays a confidence ellipse for points in a two-dimensional plot.
tslim - Confidence limits for Hotelling's T^2.
tsqmt - Calculates matrix for T^2 contributions for PCA.
vrcap - Variance captured for each variable in PCA model.
varimax - Orthogonal rotation of loadings.

Curve Resolution and Factor Analysis

als - Alternating Least Squares computational engine.
comparelcms_simengine - Calculation Engine for comparelcms.
comparelcms_sim_interactive - Interactive interface for COMPARELCMS.
coda_dw_interactive - Interactive version of CODA_DW.
coda_dw - Calculates values for the Durbin_Watson criterion of columns of data set.
corspec - Resolves correlation spectroscopy maps.
disomat - Calculates the dispersion matrix of two spectral sets.
evolfa - Evolving factor analysis (forward and reverse).
eufa - Evolving window factor analysis.
mcr - Multivariate curve resolution with constraints.
purity - Self-modeling mixture analysis method based on purity of variables or spectra.
purityengine - calculates purity values of columns of data set.
wtfa - Window target factor analysis.

Cluster Analysis and Classification

class2logical - Create a PLSDA logical block from class assignments.
class - KNN and K-means cluster analysis with dendograms.
discrimprob - Discriminate probabilities for continuous predicted values.
knn - K-nearest neighbor classifier.
plsd - Partial least squares discriminant analysis.
plsdarc - Calculate and display ROC curves for PLSDA model.
plsdthres - Bayesian threshold determination for PLS Discriminant Analysis.
simca - Soft Independent Method of Class Analogy.
svmda - SVM Support Vector Machine for classification.

Multi way Functions

alignmat - Alignment of matrices and N-way arrays.
corcordia - Evaluates consistency of PARAFAC model.
coreanal - Analysis of the core array of a Tucker model.
corecalc - Calculate the Tucker3 core given the data array and loadings.
gram - Generalized rank annihilation method.
modelviewer - Visualization tool for multi-way models.
mpca - Multi-way (unfolded) principal components analysis.
nassign - Generic script assignment indexing for n-way arrays.
nindex - Generic script indexing for n-way arrays.
npl - Multilinear-PLS (N-PLS) for true multi-way regression.
npreprocess - Preprocessing of multi-way arrays.
outerm - Computes outer product of any number of vectors.
parafac - Parallel factor analysis for n-way arrays.
parafac2 - Parallel factor analysis for unevenly sized n-way arrays.
tld - Trilinear decomposition.
tucker - Analysis for n-way arrays.

Linear and Non Linear Regression

cls - Classical Least Squares regression for multivariate Y.
cr - Continuum Regression for multivariate Y.
cr - Cross-validation for continuum regression.
crossval - Cross-validation for decomposition and linear regression.
fastnls - Fast non-negative least squares.
figmerit - Analytical figures of merit for multivariate calibration.
frpcr - Full-ratio PCR calibration and prediction.
frpcrengine - Engine for full-ratio PCR regression.
leverag - Calculate sample leverages.
lwr - Locally weighted regression for univariate Y.
lwpret - Engine for locally weighted regression models.
ml - Multiple Linear Regression for multivariate Y.
mlrengine - Multiple Linear Regression computational engine.
modpred - Predictions using standard model structures.
modrdr - Displays model info for standard model structures.
nippls - NIPALS Partial Least Squares computational engine.
prcr - Principal components regression for multivariate Y.
prcengne - Principal Component Regression computational engine.
plsp - Partial least squares regression for multivariate Y.
plspnal - NIPALS algorithm for one PLS latent variable.
polypls - PLS regression with polynomial inner-relation.
regcon - Converts regression model to y = ax + b form.
rige - Ridge regression by Hoerl-Kennard-Baldwin.
rigevec - Ridge regression by cross validation.
rinverse - Calculate pseudo inverse for PLS, PCR and RR models.
rms - Calculate Root Mean Square Error.
simps - Partial Least Squares computational engine using SIMPLS algorithm.
svmda - SVM Support Vector Machine for regression.
svmda - SVM Support Vector Machine for classification.
varcap - Calculate percent y-block variance captured by a PLS regression model.
vip - Calculate Variable Importance in Projection from regression model.

Variable Selection

calibsel - Statistical procedure for variable selection.
fullsearch - Exhaustive Search Algorithm for small problems.
gaseclcr - Genetic algorithm for variable selection with PLS.
genal - Genetic Algorithm for Variable Selection.
sgenalgplot - Plot GA results using selected variable plot, color-coded by RMSECV.
ijps - Interval PLS variable selection.
Multivariate Instrument Standardization

caltransfer - Create or apply calibration and instrument transfer models.
deresolv - Changes high resolution spectra to low resolution.
dstdfir - Standardization based on FIR modelling.
stdgen - Piecewise and direct standardization transform generator.
stdize - Applies transform from STDGEN to new spectra.

MSPC and Identification of Finite Impulse Response Models

autocor - Auto-correlation function for time series data.
crosscor - Cross-correlation function for time series data.
fire2s - Transform FIR model into equivalent state space model.
plspulsm - Identifies FIR dynamics models for MISO systems.
plsrsvc - Generate PLS models for MSPC with cross-validation.
plsrsgn - Generates a matrix of PLS models for MSPC.
replace - Replaces variables based on PCA or PLS models.
wrtpulse - Create input/output matrices for dynamic model identification.

Model Utilities

browse - PLS_Toolbox Toolbar and Workspace browser.
choosecomp - Automatic selection of components for various model types.
choosecomp - GUI to select number of components from SSQ table.
compressmodel - Remove references to unused variables from a model.
copydsfields - Copies informational fields between datasets and/or models.
correctbias - Adjusts a regression model for bias and slope errors.
matchvars - Align variables of a dataset to allow prediction with a model.
modelcache - Stores and retrieves models in the model cache.
modelsselector - Create or apply a model selector model.
modelstruct - Constructs an empty model structure.
reviewmodel - Examines a standard model structure for typical problems.
updatemod - Update model structure to be compatible with the current version.

Non Linear Optimization Tools

lmoptimize - Levenberg-Marquardt non-linear optimization.
lmmoptimize - Bounded Levenberg-Marquardt non-linear optimization.

Peak Fitting Tools

fitpeaks - Peak fitting routine.
peakfind - Automated identification of peaks.
peakstruct - Makes an empty peak definition structure.
peakfunction - Outputs the estimated peaks from parameters in PEAKDEF.
localmax - Automated identification of local maxima.
peakidtext - Writes peak ID information on present graph.

Distribution Fitting Tools

Graphical Interfaces

ktool - GUI tool for investigating the density of a sample.
qtool - GUI tool for investigating the QQ-plot.
cqtool - GUI tool for investigating the conditional QQ-plot.

Distribution Goodness of fit tests

chitest - Chi-squared goodness-of-fit distribution test.
ktest - Kolmogorov-Smirnov goodness-of-fit distribution test.
distfit - Perform chistest for all distributions.

Distribution Functions

Density, Probability, Quantile, Random Numbers

betadf - Beta
chidcf - Chi-squared
gammadf - Gamma
laplacedf - Laplace (double exp.)
logisdf - Logistic
normdf - Normal (gaussian)
raydf - Rayleigh
triangledf - Triangle
weibuldf - Weibull
cauchydf - Cauchy (Lorentzian)
expdf - Exponential
gumbeldf - Gumbel
lognormdf - Lognormal
newtondf - Newton's root
paretodf - Pareto
tdf - Student's t
unifdf - Continuous uniform

Distribution Plot functions

plotedf - Empirical distribution plot.
plotkd - Kernel density plot with overlay.
plotpct - Percentile plot.
plotcq - Conditional quantile plot.
plotq - Quantile plot.
plotsym - Symmetry plot.

Basic Statistical Tests + Utility Functions

means - Arithmetic, geometric, and harmonic means.
paramme - Maximum likelihood parameter estimates for DF_Toolbox.
pctile1 - Percentile function (used by summary).
pctile2 - Alternative definition percentile function.
randomttest - Randomization t-test for evaluating residuals from two models.
resize - Resizes arguments to same length.
signtest - Pairwise sign test for evaluating residuals from two models.
summary - Summary statistics for a data vector.
ttest1 - 1 sample t-test.
ttest2 - 2 sample t-test assuming equal variances.
ttest2u - 2 sample t-test assuming unequal variances.
ttest2p - 2 sample paired t-test.
wilcoxon - Pairwise Wilcoxon signed rank test for evaluating residuals from two models.

Programming Utilities

besttime - Returns a string describing the time interval provided (in seconds).
cell - Compares two cells for inequality in size and/or values.
classsummary - List class and axisxscale distributions for a DataSet.
comparevars - Compares two variables of any type and returns differences.
contents - Mfile of functions to enable Matlab helpwin.
encode - Translates a variable into matlab-executable code.
imgellips - Error dialog.
evirelease - Returns Eigenvector product release number.
evirescript - Create a chain of steps where each step applies a single PLS_Toolbox function.
exportfigure - Automatically export figures to an external program.
figbrowser - Browser with icons of all Matlab figures.
figuretheme - Resets a figure background and axes to a specified color.
findind - Finds the index of the array element closest to value r.
getdataset - Extract summary dataset info.
getverson - Returns current Matlab version as an integer.
getlgspre - Get overriding options (preferences) for PLS_Toolbox functions.
lddlgs - Dialog to load variable from workspace or MAT file.
movembj - Interactively reposition graphics objects.
helpplsp - Context related help on the PLS_Toolbox.
readme - Release notes for PLS_Toolbox.
reverselgbs - Flips order of bytes in a word.
setlgspre - Set overriding options (preferences) for PLS_Toolbox functions.
string_x - Add backslash before troublesome TeX characters.
vldlgs - Dialog to save variable to workspace or MAT file.