ORIGINPRO® 2024
The Ultimate Software for Graphing & Analysis

Comparison of Origin and OriginPro

OriginPro provides all of the features of Origin, plus additional analysis tools and capabilities. The following tables provide comparisons between Origin and OriginPro in such areas as curve fitting, peak analysis, statistics, signal analysis, and image handling.*

Curve Fitting		Origin	OriginPro
LINEAR AND POLYNOMIAL FITTING	Linear Regression	✓	✓
	Linear Fit with X Error		✓
	Confidence Ellipse for Linear Fit	✓	✓
	Polynomial Regression	✓	✓
	Multiple Linear Regression	✓	✓
	Partial Leverage Plots in Multiple Regression	✓	✓
	Residual Analysis	✓	✓
NONLINEAR FITTING	Fitting Multiple Datasets	✓	✓
	Built-in Fitting Function and User-defined Fitting Function	✓	✓
	Parameter Initialization and Derived Parameter Definition	✓	✓
	Bounds and Constraints	✓	✓
	Weighted Fitting	✓	✓
	Fitting with Y Error	✓	✓
	Fitting with X and Y Errors (Orthogonal Regression)		✓
	Global Fit with Parameter Sharing	✓	✓
	Fitting Replica Data	✓	✓
	Residual Analysis	✓	✓
	Fitting with Implicit Functions (Orthogonal Distance Regression)		✓
	Fitting Comparison		✓
	Fit and Rank Multiple Models		✓
	Surface Fitting		✓

Mathematics		Origin	OriginPro
SIMPLE MATHEMATICS OPERATIONS	Simple Mathematics Operations on or Between Datasets	✓	✓
	Set Cell, Column or Matrix Values by Using Mathematics Operations	✓	✓
	Normalization	✓	✓
INTERPOLATION AND EXTRAPOLATION	1D Interpolation and Extrapolation	✓	✓
	Interpolation and Extrapolation of Y From X	✓	✓
	Trace Interpolation on XY Data	✓	✓
	Trace Interpolation on XYZ Data	✓	✓
	2D Interpolation and Extrapolation	✓	✓
	3D Interpolation	✓	✓
DIFFERENTIATION AND INTEGRATION	Numerical Differentiation	✓	✓
	1D Numerical Integration	✓	✓
	2D Volume Integration		✓
AREA CALCULATION	Polygon Area	✓	✓
	XYZ Surface Area		✓
	Matrix Surface Area		✓
OTHERS	Average Multiple Curves	✓	✓
	Inverse of a Matrix	✓	✓

Note: New Apps are released frequently. Please visit originlab.com/Apps for the most up-to-date list.

Note: If you don't see features listed here, it means they exist in both regular and Pro.

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Statistics		Origin	OriginPro
DESCRIPTIVE STATISTICS	Basic Descriptive Statistics	✓	✓
	1D and 2D Frequency Counts	✓	✓
	Correlation Coefficient		✓
	Partial Correlation Coefficient		✓
	Cross Tabulation		✓
	Discrete Frequency	✓	✓
	Distribution Fit		✓
	Normality Test (Shaprio-Wilk, Lilliefors, Kolmogorov-Smirnov, Anderson-Darling, D'Agostino-K Squared, Chen-Shapro)	✓	✓
	Statistics Charts: Histogram, Box Chart, Scatter Matrix, QC Chart, Probability Plot, Q-Q Plot, and Pareto Chart	✓	✓
	Grubbs Test and Q-test to Detect Outliers	✓	✓
HYPOTHESIS TESTING	One Sample and Two-Sample t-Test, Pair-Sample t-Test	✓	✓
	Two Sample and Paired-Sample t-Test on Rows		✓
	One Sample and Two Sample Hypothesis Tests for Variance		✓
	One and Two-Proportion Test		✓
ANALYSIS OF VARIANCE	One Way ANOVA, Two Way ANOVA	✓	✓
	Three Way ANOVA		✓
	ANOVA: Mean Comparison (Tukey, Bonferroni , Scheffe, Dunn-Sidak, Fisher LSD, Holm-Bonferroni, Holm-Sidak)	✓	✓
	One Way and Two Way Repeated Measure ANOVA		✓

Statistics (con't)		Origin	OriginPro
NONPARA-METRIC TESTS	Paired Sample Sign Test		✓
	Wilcoxon Test for One Sample and Paired Sample		✓
	Two Sample Kolmogorov-Smirnov Test		✓
	Mann-Whitney Test		✓
	Kruskal-Wallis ANOVA		✓
	Mood's Median Test		✓
	Friedman ANOVA		✓
MULTIVARIATE ANALYSIS	Principal Component Analysis		✓
	Cluster Analysis		✓
	Discrimininant Analysis		✓
	Canonical Discriminant Analysis		✓
	Partial Least Squares		✓
SURVIVAL ANALYSIS	Kaplan-Meier Estimator		✓
	Test Equality of Survival Functions (Log-Rank, Breslow and Tarone-Ware)		✓
	Cox Proportional Hazard Model		✓
	Weibull Fit		✓
POWER AND SAMPLE SIZE	One, Two and Paired-Sample t-Test, One Way ANOVA, One and Two-Proportion Test, One and Two -Variance Test		✓
ROC CURVE	ROC Curve		✓

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Signal Analysis		Origin	OriginPro
SMOOTHING AND FILTERING	Smoothing using Savitzky-Golay Filter, Adjacent Averaging, FFT Filter, and Percentile Filter	✓	✓
	FFT Filters: Low Pass, Low Pass Parabolic, High Pass, Band Pass, Band Block, and Threshold	✓	✓
	IIR Filter Design		✓
FAST FOURIER TRANSFORM (FFT)	FFT with Basic Options	✓	✓
	2D FFT and 2D FFT Basic Filtering		✓
	Short-Time Fourier Transform (STFT)		✓
WAVELET ANALYSIS	Discrete Wavelet Transform (DWT) and Inverse Discrete Wavelet Transform (IDWT)		✓
	Wavelet Smoothing		✓
	Wavelet Denoising		✓
	Continuous Wavelet Transform (CWT)		✓
	Evaluation of Continuous Wavelet Function		✓
OTHERS	Convolution and Deconvolution	✓	✓
	Coherence		✓
	1D Correlation	✓	✓
	2D Correlation		✓
	Hilbert Transform		✓
	Signal Envelope		✓
	Signal Decimation		✓
	Rise and Fall Time Analysis		✓

Peak Analysis		Origin	OriginPro
PEAK ANALYSIS	Baseline Detection	✓	✓
	Baseline Subtraction	✓	✓
	Peak Finding	✓	✓
	Peak Integration	✓	✓
	Batch Peak Analysis	✓	✓
	Peak Fitting		✓
	Fit Baseline with Peaks		✓
	Fit Individual Peaks with Different Fitting Functions		✓

Gadget		Origin	OriginPro
GADGETS	Surface Integration Gadget		✓
	Global Vertical Cursor Gadget Across Graphs	✓	✓
	Intersect Gadget	✓	✓
	Sigmoidal Fit Gadget	✓	✓
	Cluster Gadget		✓
	Quick Peaks Gadget	✓	✓
	Differentiate and Interpolate Gadget	✓	✓
	Quick Fit Gadget	✓	✓
	Rise Time Gadget		✓
	Integrate, FFT and Statistics Gadget	✓	✓

Graphing		Origin	OriginpPtro
GRAPHING	Connect Data Points to Centroid, Show Convex Hull or Confidence Ellipse for Scatter Plot		✓
	2D and 3D Graphing	✓	✓

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APPS		Origin	OriginPro
CURVE FITTING	Pulse Fit		✓
	Redlich–Kister Polynomial Fit		✓
	Rank Models by Fit Reports		✓
	Linear Regression with Marginal Distribution		✓
	Neural Network Regression		✓
	Quantile Regression		✓
	Fit ODE		✓
	Global Fit with Multiple Functions		✓
	3D Smoother		✓
	Rank Models		✓
	Polynomial Surface Fit		✓
	Sequential Fit		✓
	Piecewise Fit		✓
	Enzyme Kinetics		✓
	General Linear Regression		✓
	Composite Spectrum Regression		✓
	Fit Adsorption Isotherm		✓
	Find a Fitting Function	✓	✓
	2D Smoother	✓	✓
	Simple Fit	✓	✓
	Compare Datasets	✓	✓
	Compare Linear Fit Parameters and Datasets	✓	✓
PEAK ANALYSIS	Tangential Baseline		✓
	X-Ray Diffraction Analysis		✓
	2D Peak Analysis		✓
	Gel Molecular Weight Analyzer		✓
	Global Peak Fit		✓
	Peak Deconvolution		✓
	Align Peaks	✓	✓

APPS (con't)		Origin	OriginPro
MATHEMATICS	Propagation of Error		✓
	Matrix Analysis		✓
	Optimization Solver		✓
	Apparent Integraion		✓
	Equations Solver		✓
	Concave Hull		✓
	Popular Constants	✓	✓
	Curvature Radius	✓	✓
	Tangent	✓	✓
	Tafel Extrapolation	✓	✓
	Distance Between Two Points	✓	✓
	Level Crossing	✓	✓
SIGNAL PROCESSING	Power Spectral Density		✓
	Gaussian Filtering in Surface Metrology		✓
	Rainflow Counting		✓
	Zoom FFT		✓
	Empirical Mode Decomposition		✓
	Modified Short-Time Fourier Transform		✓
	Direct Linear Transformation		✓
	Independent Component Analysis		✓
	Dynamic Time Warping		✓
	Simple pCLAMP Analyzer		✓
	Time-Frequency Analysis		✓
	Fourier Self-Deconvolution		✓
	FFT Examiner		✓
	White Noise	✓	✓

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APPS (con't)		Origin	OriginPro
STATISTICS	Statistical Process Control		✓
	Design of Experiments		✓
	Poisson Regression		✓
	Generalized Additive Model		✓
	Chi-Square Test for Contingency Table		✓
	Power and Sample Size for Equivalence Tests		✓
	Sparse Principal Components Analysis		✓
	Generalized Linear Mixed Model		✓
	Abbott-Firestone Curve		✓
	Bootstrap Sampling		✓
	Effect Size for ANOVA		✓
	Steel-Dwass Test		✓
	Radiometric Geochronology Analysis		✓
	Advanced Time Series Analysis		✓
	Welch ANOVA		✓
	Overlap of Empirical Distributions		✓
	Structural Equation Modeling		✓
	Drug Dissolution Analysis		✓
	Surface Roughness Parameters		✓
	MANOVA		✓
	Probit Analysis		✓
	ANOVA from Summary Data		✓
	Optimal Cluster Number		✓
	1D Statistical Parametric Mapping		✓

APPS (con't)		Origin	OriginPro
STATISTICS	Detrended Correspondence Analysis		✓
	Standard Curve Analysis		✓
	Linear Mixed Effects Model		✓
	SVM Classification		✓
	Canonical Correlation Analysis		✓
	Nonmetric Multidimensional Scaling		✓
	2D Correlation Spectroscopy Analysis		✓
	Change Point Analysis		✓
	Gaussian Mixture Models		✓
	Factor Analysis		✓
	Simple Time Series Analysis		✓
	Principal Component Analysis for Spectroscopy		✓
	Advanced Principal Component Analysis		✓
	Post-hoc Analysis for Nonparametric Tests		✓
	NetCDF Data Analysis		✓
	Mann-Kendall Test		✓
	Asymmetric Correlation Matrix	✓	✓
	Logistic Regression	✓	✓
	Hurst Exponent	✓	✓

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IMAGE PROCESS-ING	NIfTI Slicer		✓
	Brain Atlas Analyzer		✓
	Image Object Counter		✓
	Bubble Image Area		✓
GRAPH CUSTOMIZATION	Soil/Rock Classification Diagrams	✓	✓
	Color Editor	✓	✓
	LaTeX	✓	✓
	Google Map Import	✓	✓
	Maps Online	✓	✓
	Import Shapefile	✓	✓
	Colormap for Map Data	✓	✓
	Layer Stack Manager	✓	✓
DATA PROCESS-ING	Classify Points in Graph		✓
	Video Data Explorer		✓
	Distributed Batch Processing		✓
	OPJ Packer		✓
	Extract XY Data in Graph	✓	✓
	Project Manager	✓	✓
	Periodic Report	✓	✓
	Hysteresis	✓	✓
	OPJ Packer	✓	✓
	Toolbar Maker	✓	✓
	Data Slicer	✓	✓
	OPJ Searcher	✓	✓

APPS (con't)		Origin	OriginPro
GRAPHING	Youden Plot		✓
	Gardner-Altman Plot		✓
	Torsional Angle Wheel Plot		✓
	Piper Diagram		✓
	Marginal Abatement Cost Curve		✓
	Manhattan Plot for GWAS (Genome-Wide Association Studies)		✓
	Image Stack Profile		✓
	Heat Map with Dendrogram		✓
	3D Antenna Radiation Pattern		✓
	Correlation Plot		✓
	Polar Heatmap with Dendrogram		✓
	Polar Contour Profile	✓	✓
	Means Plot	✓	✓
	Rectangle and Ellipse Profile	✓	✓
	Common Bar Width	✓	✓
	Color Spectrum Plot	✓	✓
	Hansen Solubility Parameter Plot	✓	✓
	Ternary Contour Profile	✓	✓
	Taylor Diagram	✓	✓
	3D Polar Strain Map	✓	✓
	Zoomed Inset Plus	✓	✓
	3D Wind Rose	✓	✓
	Isosurface	✓	✓
	Graph Maker	✓	✓
	Batch Plotting	✓	✓
	Chromaticity Diagram	✓	✓
	Paired Comparison Plot	✓	✓
	Kernel Density for Polar and Ternary	✓	✓
	3D Wall Profile	✓	✓
	Plot Sub Matrix	✓	✓
	Zoomed Inset	✓	✓

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APPS (con't)		Origin	OriginPro
IMPORT AND EXPORT	Import Chem Data		✓
	Flow Cytometry Standard Connector	✓	✓
	Nicolet WFT Connector	✓	✓
	Stiegele MDF Connector	✓	✓
	Shapefile Connector	✓	✓
	N42 Connector	✓	✓
	GeoTIFF Export	✓	✓
	Import PDF Tables	✓	✓
	TDMS Connector	✓	✓
	Yokogawa WDF Connector	✓	✓
	MDF4 Connector	✓	✓
	BioLogic Connector	✓	✓
	MetroPro Connector	✓	✓
	Minitab Connector	✓	✓
	NetCDF Connector	✓	✓
	Word Connector	✓	✓
	Import NMR Data	✓	✓
	LeCroy Connector	✓	✓
	Import SAS XPT Files	✓	✓
	HTML Report Assistant	✓	✓
	Graph Publisher	✓	✓
	Import LSM	✓	✓
	Movie Creator	✓	✓
	HDF5 Browser	✓	✓
	Import Tektronix WFM Files	✓	✓
	Agilent MS Reader	✓	✓
	Export Multiple Worksheets	✓	✓
	Send Graphs to Powerpoint	✓	✓
	Send Graphs to Word	✓	✓

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