# ORIGINPRO® 2027

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 | Predictive Modeling Advisor | ✓ | ✓ |
| | 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) | | ✓ |
| | Robust Regression | | ✓ |
| | Auto-detect outliers via Robust 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 | | ✓ |
| | Standard Curve Analysis | | ✓ |
| | Enzyme Kinetics | | ✓ |

| 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 | ✓ | ✓ |

| STATISTICS | | Origin | OriginPro |
|---|---|---|---|
| DESCRIPTIVE STATISTICS | Basic Descriptive Statistics | ✓ | ✓ |
| | Graphical Summary | ✓ | ✓ |
| | 1D and 2D Frequency Counts | ✓ | ✓ |
| | Correlation Coefficient | | ✓ |
| | Partial Correlation Coefficient | | ✓ |
| | Cross Tabulation | | ✓ |
| | Discrete Frequency | ✓ | ✓ |
| | Distribution Fit | | ✓ |
| | Normality Test (Shapiro-Wilk,Lilliefors, Kolmogorov-Smirnov, Anderson-Darling, D'Agostino's K-squared Test, Chen-Shapiro) | ✓ | ✓ |
| | 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 | ✓ | ✓ |

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

| STATISTICS | | Origin | OriginPro |
|---|---|---|---|
| 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 | | ✓ |
| | Equal Variance Test | | ✓ |
| | One and Two-Proportion Test | | ✓ |
| | Test for Homogeneity of Proportions | | ✓ |
| | One and Two-Sample Poisson Rate Test | | ✓ |
| | Chi-Square Goodness-of-Fit Test | | ✓ |
| | Chi-Square Test for Contingency Table | | ✓ |
| REGRESSION | General Linear Regression | | ✓ |
| | Best Subset Selection | | ✓ |
| | Logistic Regression | | ✓ |
| | Poisson Regression | | ✓ |
| ANALYSIS OF VARIANCE | One Way ANOVA, Welch ANOVA, Two Way ANOVA | ✓ | ✓ |
| | Three Way ANOVA | | ✓ |
| | ANOVA: Mean Comparison (Tukey, Bonferroni, Scheffe, Dunn-Sidak, Dunnett, Fisher LSD, Holm-Bonferroni,Holm-Sidak) | ✓ | ✓ |
| | One Way and Two Way Repeated Measure ANOVA | | ✓ |
| | Linear Mixed Effects Model | | ✓ |
| | MANOVA | | ✓ |
| 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 | | ✓ |
| | Factor Analysis | | ✓ |
| | Cluster Analysis | | ✓ |
| | Discriminant Analysis | | ✓ |
| | Canonical Discriminant Analysis | | ✓ |
| | Partial Least Squares | | ✓ |
| | Decision Tree Analysis | | ✓ |

| STATISTICS | | Origin | OriginPro |
|---|---|---|---|
| SURVIVAL ANALYSIS | Kaplan-Meier Estimator | | ✓ |
| | Test Equality of Survival Functions (Log-Rank, Breslow and Tarone-Ware ) | | ✓ |
| | Cox Proportional Hazard Model | | ✓ |
| | Weibull Fit | | ✓ |
| | Distribution Analysis (Right/ Arbitrary Censoring): Parametric and Nonparametric distribution analysis, Identify distribution, Distribution Overview | | ✓ |
| | Regression with Life Data | | ✓ |
| | Life Test Plans | | ✓ |
| | Warranty Analysis | | ✓ |
| | Probit Analysis | | ✓ |
| POWER AND SAMPLE SIZE | One, Two and Paired-Sample t-Test, One Way ANOVA, One and Two-Proportion Test, One and Two -Variance Test, One and Two-Poisson Rate Test, Sample Size for Estimation | | ✓ |
| QUALITY IMPROVEMENT | Design of Experiments | | ✓ |
| | Statistical Process Control | | ✓ |
| | Tolerance Intervals | | ✓ |
| | Gage Study | | ✓ |
| | Attribute Agreement Analysis | | ✓ |
| | Acceptance Sampling Analysis | | ✓ |
| | Stability Study | | ✓ |
| | Monte Carlo Simulation | | ✓ |
| TIME SERIES | Time Series Pivot | ✓ | ✓ |
| | Unstack by Time Interval | ✓ | ✓ |
| | Time Series Explorer | ✓ | ✓ |
| | Time Series Analysis | | ✓ |
| LAB ASSAYS | Western Blot | | ✓ |
| | qPCR | | ✓ |
| ROC CURVE | ROC Curve | | ✓ |

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| 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 | | ✓ |
| **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 | | ✓ |
| **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 | OriginPro |
|---|---|---|---|
| GRAPHING | Connect Data Points to Centroid, Show Convex Hull or Confidence Ellipse for Scatters | | ✓ |
| | 2D and 3D Graphing | ✓ | ✓ |
| **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 | | ✓ |
| | Composite Spectrum Regression | | ✓ |
| | Fit Adsorption Isotherm | | ✓ |
| | Find a Fitting Function | ✓ | ✓ |
| | 2D Smoother | ✓ | ✓ |
| | Simple Fit | ✓ | ✓ |
| | Compare Datasets | ✓ | ✓ |
| | Compare Linear Fit Parameters and Datasets | ✓ | ✓ |
| PEAK ANALYSIS | Piecewise Peak Fitting | | ✓ |
| | Batch Peak Integration | | ✓ |
| | Tangential Baseline | | ✓ |
| | X-Ray Diffraction Analysis | | ✓ |
| | 2D Peak Analysis | | ✓ |
| | Gel Molecular Weight Analyzer | | ✓ |
| | Global Peak Fit | | ✓ |
| | Peak Deconvolution | | ✓ |
| | Align Peaks | ✓ | ✓ |

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|---|---|---|---|
| MATHEMATICS | Propagation of Error | | ✓ |
| | Matrix Analysis | | ✓ |
| | Optimization Solver | | ✓ |
| | Apparent Integration | | ✓ |
| | Equations Solver | | ✓ |
| | Concave Hull | | ✓ |
| | Convert Global to Local Coordinates | ✓ | ✓ |
| | Popular Constants | ✓ | ✓ |
| | Curvature Radius | ✓ | ✓ |
| | Tangent | ✓ | ✓ |
| | Tafel Extrapolation | ✓ | ✓ |
| | Distance Between Two Points | ✓ | ✓ |
| | Level Crossing | ✓ | ✓ |
| SIGNAL PROCESSING | FIR Filter | | ✓ |
| | IIR Comb Filter | | ✓ |
| | Signal-to-noise Ratio | | ✓ |
| | 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 | | ✓ |
| | Extract Ridge from Spectrogram | | ✓ |
| | White Noise | ✓ | ✓ |

| APPS | | Origin | OriginPro |
|---|---|---|---|
| STATISTICS | Random Forest | | ✓ |
| | Random Sample | | ✓ |
| | Partial Least Squares-Discriminant Analysis | | ✓ |
| | Generalized Additive Model | | ✓ |
| | 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 | | ✓ |
| | Overlap of Empirical Distributions | | ✓ |
| | Structural Equation Modeling | | ✓ |
| | Drug Dissolution Analysis | | ✓ |
| | Surface Roughness Parameters | | ✓ |
| | ANOVA from Summary Data | | ✓ |
| | Optimal Cluster Number | | ✓ |
| | 1D Statistical Parametric Mapping | | ✓ |
| | Detrended Correspondence Analysis | | ✓ |
| | SVM Classification | | ✓ |
| | Canonical Correlation Analysis | | ✓ |
| | Nonmetric Multidimensional Scaling | | ✓ |
| | 2D Correlation Spectroscopy Analysis | | ✓ |
| | Change Point Analysis | | ✓ |
| | Gaussian Mixture Models | | ✓ |
| | Principal Component Analysis for Spectroscopy | | ✓ |
| | Advanced Principal Component Analysis | | ✓ |
| | Post-hoc Analysis for Nonparametric Tests | | ✓ |
| | NetCDF Data Analysis | | ✓ |
| | Mann-Kendall Test | | ✓ |
| | Asymmetric Correlation Matrix | ✓ | ✓ |
| | Hurst Exponent | ✓ | ✓ |
| | NIfTI Slicer | | ✓ |

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|---|---|---|---|
| IMAGE PROCESSING | Brain Atlas Analyzer | | ✓ |
| | Image Object Counter | | ✓ |
| | Bubble Image Area | | ✓ |
| | Soil/Rock Classification Diagrams | ✓ | ✓ |
| GRAPH CUSTOMIZATION | Color Editor | ✓ | ✓ |
| | LaTeX | ✓ | ✓ |
| | Google Map Import | ✓ | ✓ |
| | Maps Online | ✓ | ✓ |
| | Import Shapefile | ✓ | ✓ |
| | Colormap for Map Data | ✓ | ✓ |
| | Layer Stack Manager | ✓ | ✓ |
| | Poincare Plot | | ✓ |
| 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 | | ✓ |
| | Stem-and-Leaf Plot | ✓ | ✓ |
| | Nyquist Plot | ✓ | ✓ |
| | 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 MatrixView | ✓ | ✓ |
| | Zoomed Inset | ✓ | ✓ |
| | Venn Diagram | ✓ | ✓ |
| | Volcano Plot | ✓ | ✓ |
| | Time-temperature Superposition | | ✓ |

| APPS | | Origin | OriginPro |
|---|---|---|---|
| DATA PROCESSING | Classify Points in Graph | | ✓ |
| | Video Data Explorer | | ✓ |
| | Distributed Batch Processing | | ✓ |
| | OPJ Packer | | ✓ |
| | Text to Columns | ✓ | ✓ |
| | Extract XY Data in Graph | ✓ | ✓ |
| | Project Manager | ✓ | ✓ |
| | Periodic Report | ✓ | ✓ |
| | Hysteresis | ✓ | ✓ |
| | Toolbar Maker | ✓ | ✓ |
| | Data Slicer | ✓ | ✓ |
| | OPJ Searcher | ✓ | ✓ |
| | Import Chem Data | | ✓ |
| IMPORT AND EXPORT | Prism Connector | ✓ | ✓ |
| | DMD Connector | ✓ | ✓ |
| | RPC3 Connector | ✓ | ✓ |
| | Ivium Connector | ✓ | ✓ |
| | Import and Export STL | ✓ | ✓ |
| | Metrohm Connector | ✓ | ✓ |
| | Neware Connector | ✓ | ✓ |
| | Export to mat | ✓ | ✓ |
| | Perkin Elmer Connector | ✓ | ✓ |
| | XRDML Connector | ✓ | ✓ |
| | ChemStation Reader | ✓ | ✓ |
| | Flow Cytometry Standard Connector | ✓ | ✓ |
| | Nicolet WFT Connector | ✓ | ✓ |
| | Stiegele MDF Connector | ✓ | ✓ |
| | Shapefile Connector | ✓ | ✓ |
| | N42 Connector | ✓ | ✓ |
| | GeoTIFF Export | ✓ | ✓ |
| | Import PDF Tables | ✓ | ✓ |
| | TDMS Connector | ✓ | ✓ |
| | Yokagawa 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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