



# New Features in SigmaXL Version 11

## ADVANCED DESIGN OF EXPERIMENTS (DOE)

### ► Extends DOE functionality to include:

- Improved 2-Level Factorial/Screening Designs:
  - Expanded catalog with up to 128 design runs
  - Up to 19 Continuous and/or Categorical Factors
  - Aliasing of Effects Report with Interactions to Specified Order
- Augment 2-Level Factorial/Screening Design:
  - Foldover Design
  - Add Center/Axial Points
  - Replicate Design
- General Full Factorial Designs:
  - 1 to 10 Categorical Factors with 10 Levels
  - Use 1 Categorical Factor with Block on Replicates for Randomized Complete Block Design
- Improved Response Surface Designs:
  - Expanded catalog with up to 128 design (cube) runs
  - Up to 8 Continuous Factors and 10 Categorical Factors with 8 Levels
  - Central Composite Designs with minimum of 2 center points, Uniform Precision or Orthogonal Blocks
  - Box-Behnken Designs for 3 to 7 Continuous Factors
- Definitive Screening Designs:
  - Up to 19 Continuous and/or Categorical Factors (minimum of 2 Continuous)

### • Optimal Designs:

- D-Optimal (recommended as an efficient general purpose alternative to classical screening and two-level factorial designs)
  - I-Optimal (recommended for response surface designs)
  - A-Optimal (recommended for screening designs)
  - 1 to 19 Continuous and/or Categorical Factors (maximum of 10 Categorical Factors with 10 Levels)
  - Continuous Factor linear constraint formulas
  - Report of Optimal Design Diagnostic Metrics and Model Term SE and VIF values
- Improved power calculator with detailed power information (2-Level Factorial/Screening, Augment and General Full Factorial Designs)
  - Fraction of Design Space (FDS) Plots (Augment 2-Level Factorial/Screening for Add Center/Axial Points, Definitive Screening, Response Surface and Optimal Designs)
  - Option for randomized or equally spaced center points (2-Level Factorial/Screening, Definitive Screening and Response Surface Designs)
  - Randomize runs with Seed (Base) as Clock or Specified Value
  - Analysis (for all designs) uses Advanced Multiple Regression, with options such as Stepwise/Best Subsets and includes Multiple Response Optimization

### ► NEW GRAPHICAL TOOLS

- Overlay Histograms & Descriptive Statistics
- Interaction Plot

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