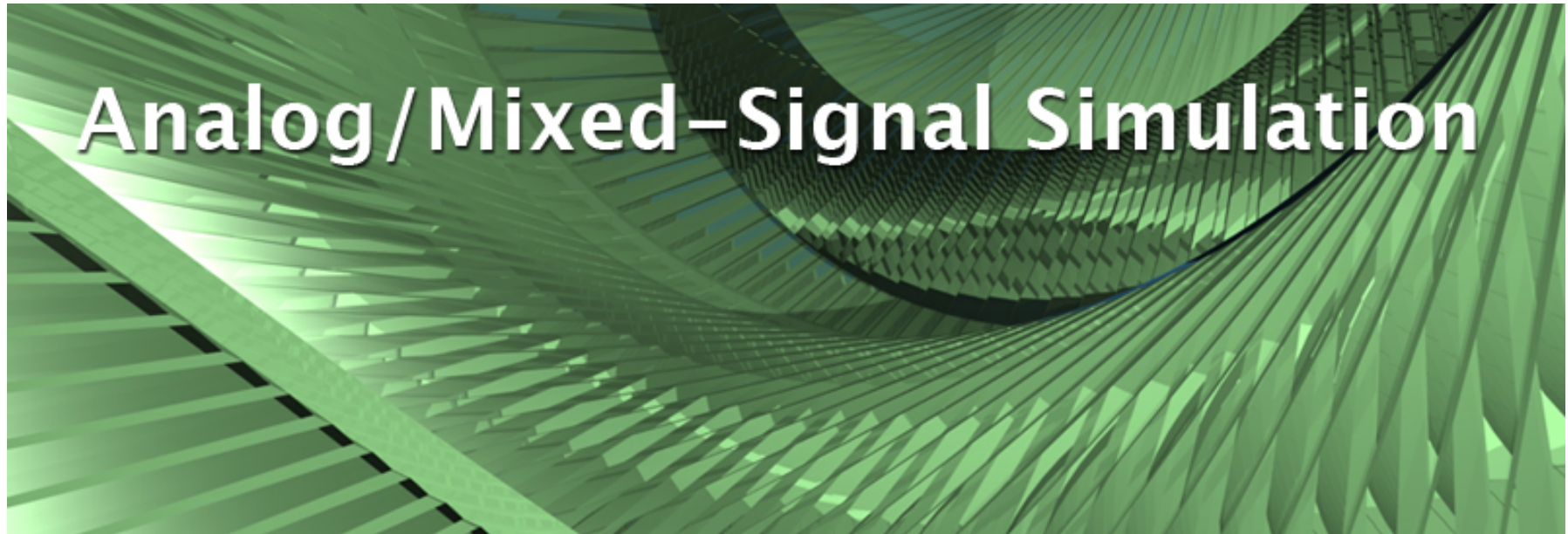


SmartSpice Training Program



Part 2: SmartView



SILVACO

Analog / Mixed-Signal Simulation

What Is SmartView?

- SmartView is an analog time & frequency domain waveform and data post-processing analysis engine capable of handling GB+ size files with ease thanks to an advanced memory management system
- SmartView directly reads HSPICE output, CSV and SmartSpice binary .raw SPICE simulator result files
- SmartView supports multi-level undo-redo of user actions
- User configurable preference controls, an intuitive GUI and a library of advanced measurement libraries make SmartView an easy to use and productive design review and documentation tool

Analog / Mixed-Signal Simulation

Signal Selection and Graphing Options

- Multiple signal selection with “Drag ‘n’ Drop” and/or cross-probing from Gateway schematic or object/signal/analysis browser list
- “On-the-Fly” object centric “right-click” editable graphing features
- User customizable configuration and environment file of graphing and display preferences for page layout, line color, pattern & thickness, fonts, grid control, sequence, legend and chart types
- Comment annotation text & arrows for documentation & presentation of data results

Analog / Mixed-Signal Simulation

Interactive & Composite Measurements

- Real-time or post-simulation data plotting and analysis
- Zoomable X, Y and box data window with optional data smoothing & re-sampling algorithms
- Interactive data, slope & AB compare markers & probing
- Interactive average, instantaneous derivative, integral, min/max and RMS single point measures in sampled or interpolated data modes of nodal & device power, voltage, current or user-defined variables
- Composite measurement of overshoot, period, rise/fall times, delay, frequency, X/Y axis locked crossing and signal crossing points with cycle/edge skip controls

Analog / Mixed-Signal Simulation

Advanced Concepts & Post-Processing Options

- SmartView has the ability to merge the simulation scales, and interpolate between points to fill in for missing values
- SmartView will automatically perform re-sampling of data, as required to perform mathematical operations on vectors from different simulations, produce more realistic FFTs, and split swept data into the same level
- **Object** → **Split Sweep** - swept curves are split into separate curves on the same axis
- The memory management mode can be changed in **the Edit** → **Preferences** → **Preferences** → **General** panel under the setting Optimize for:
 - **Memory** – “just in time” loading of the data for binary SMARTSPICE rawfiles. Minimizes load time, but pauses between actions to load data
 - **Speed** – all data in the file is loaded into memory at initialization. Maximize speed, but limits data file size to what can fit in memory. Use **File** → **Clear Cache** to eliminate unwanted data when done

Analog / Mixed-Signal Simulation

Advanced Concepts & Post-Processing Options (con't)

- Advanced data display and analysis modes:
 - Eye diagram generation - w/trigger modes (Clock Signal, Crossing Signal and Synthetic Clock)
 - FFT Analysis - w/ data windowing controls (Rectangular, Bartlett, Hanning, Hamming, Blackman, Blackman–Harris, Gaussian, Kaiser–Bessel, Parzen, Welch, Riesz, Riemann, Poisson, Cauchy)
 - Histograms - w/ auto or manual binning control
 - Vector calculator - w/ advanced math function library
 - Constellation diagrams - for I/Q data vector analysis
 - Polar and Cartesian plotting options for Real & Complex data sets
 - Y & Z Smith charts
 - Jitter analysis & measurement