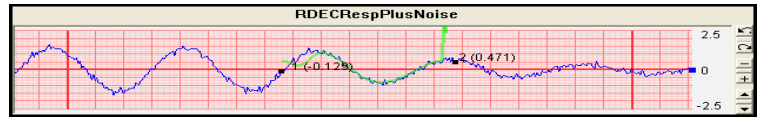
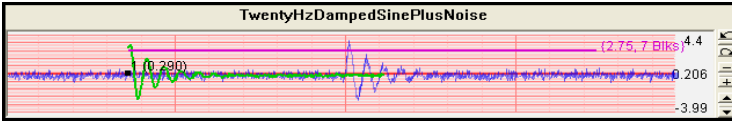


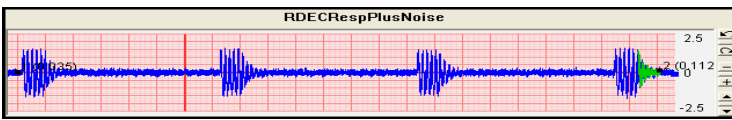
DATA REDUCTION TECHNIQUES

- Reduce the Influence of Noise and Nonlinearities on your Signals
- A full Suite of Digital Signal Processing Techniques are Readily Available
- Isolate Natural Decay of Interest to a Data Overlay for Modal Analysis
- All Overlays can be Analyzed with the Modal Tools Described Below



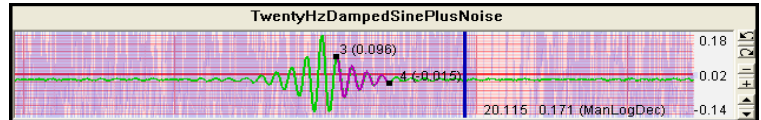
Random Decrement (Real Time and Fixed Block)

- Extract Randomdec Signature from Ambient Response Data using Block Averaging



Wavelet Denoise (Fixed Block)

- Separate Natural Decay from Random Noise using a Wavelet-Based Technique



Pseudo Randomdec (Auto and Fixed Block)

- Average Natural Decays after FES Burst leaving only the Response of Interest

Auto Correlation (Fixed Block)

- Correlate a Time Slice with Itself to Extract a Useful Signal

Apply Standard Time Domain Modal Analysis Techniques To Natural Decays

Logarithmic Amplitude Picking (1DOF)

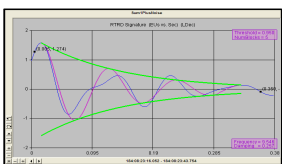
- Fits Decaying Sinusoid to User-Defined Points On or Off of the Data

Logarithmic Decrement (1DOF)

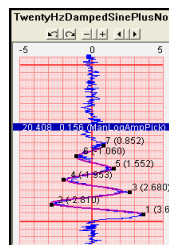
- Counts Peaks and Zero Crossings between Endpoints to fit Decaying Sinusoid Model

Logarithmic Decrement Averaging (1DOF)

- Averages Log Decrement from Successive Peaks between Selected Endpoints to fit Decaying Sinusoid Model

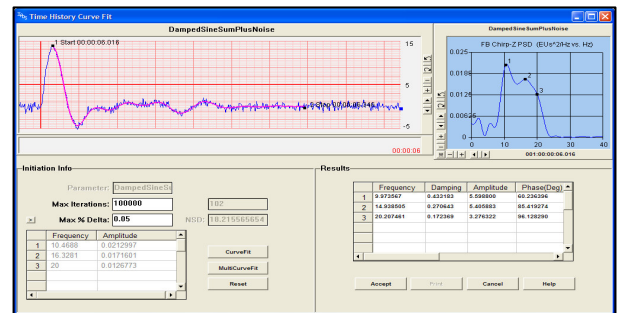


- Logarithmic Envelope shown on Real Time Randomdec Display
- Decays containing more than one Frequency can be sent to the Time History Curve Fit



Time History Curve Fit (MDOF)

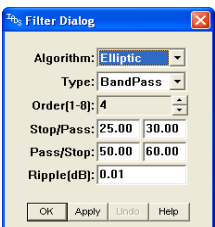
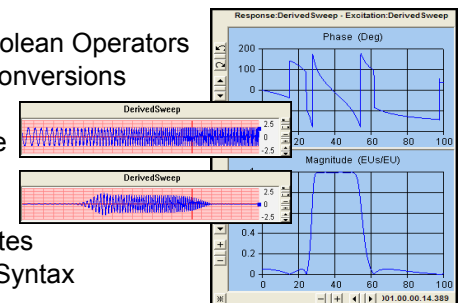
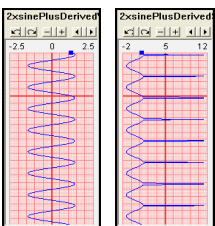
- Extract Frequency, Damping, Amplitude and Phase
- Overlay Immediately Confirms Accuracy of Fit
- Rapid Convergence and Minimal Required Interaction
- Amplitude and Phase can drive ODS



Digital Signal Processing, Signal Generation and Extensive Derived Equation Functionality

Derived Equations and Signal Generation

- Arithmetic, Trigonometric, Exponential/Logarithmic, Bitwise and Boolean Operators
- Degrees/Radians, Cartesian/Polar and other Coordinate System Conversions
- COM Functions can be called from the Derived Engine, allowing a user to Generate Derived Parameters with Legacy or Custom Code
- Generate Diagnostic Waveforms - Sine, Sweep, Noise and Others
- Time-Based, Statistical, Interpolation and Decimation Functions
- Get/Set Functions for Comprehensive Access to Parameter Attributes
- Create Complex Derived Functions using intuitive IF-THEN-ELSE Syntax



Digital Filtering and Data Editing

- The Frequency Response of an IADS Digital Filter can be easily Confirmed in a Frequency Display
- IIR Butterworth and Elliptic Specifications in Low Pass, High Pass and Band Pass Responses
- Custom FIR and IIR Filters can be Developed using Derived Equations or COM Functions
- Wild Point Editing, Spike Detection & Correction and Nulling