SimDE™ *MODEL*

Modeling your device with performance and accuracy

V4.2 - Release 201309

Doc version: V1.0

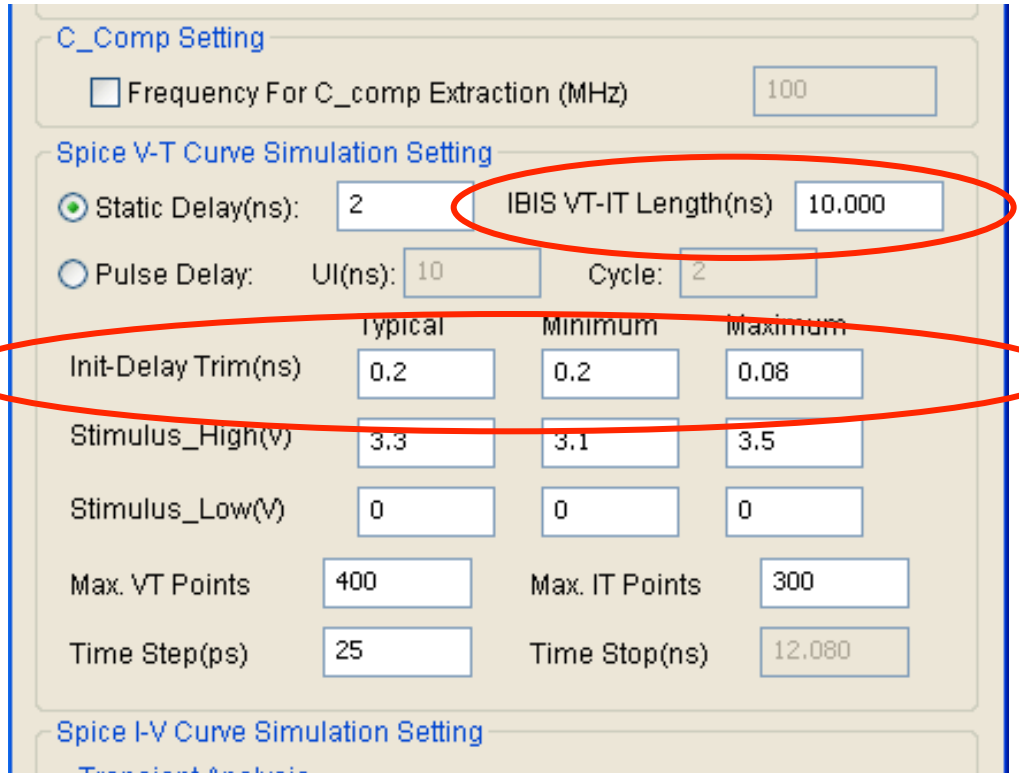
What's New in V4.2 201309

- Supports IBIS VT/IT initial delay trim requirement
- Enabled to specify stimulus Rising/Falling edges for VT curve extractions
- Enabled to specify IBIS VT/IT curve total length control
- Allowed user to specify the maximum VT/IT point numbers for file size reduction

SimDE™MODEL

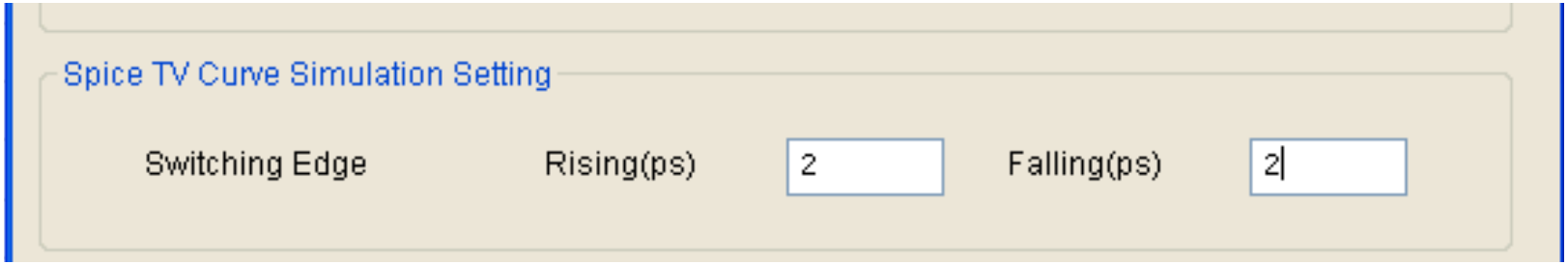
- **The first complete IBIS model development and validation tool**
  - Support all IBIS buffer type extraction / generation
  - Automated differential IBIS model (True, Pseudo and Half) extraction / generation
  - Integrated IBIS model validation for single-end and differential-pair IBIS buffers
  - Support IBIS 5.0 PDN feature extractions
- **The industry first Spice Macromodel development tool with Fitting and Validating functionalities**
  - Support advance digital buffer model development
  - Automated Fitting and Validating functionalities with golden waveforms
  - Support analog model development

IBIS VT/IT initial delay trim and curve length control



Proper Initial delay trim and curve length control will help for overclocking issue in IBIS simulations

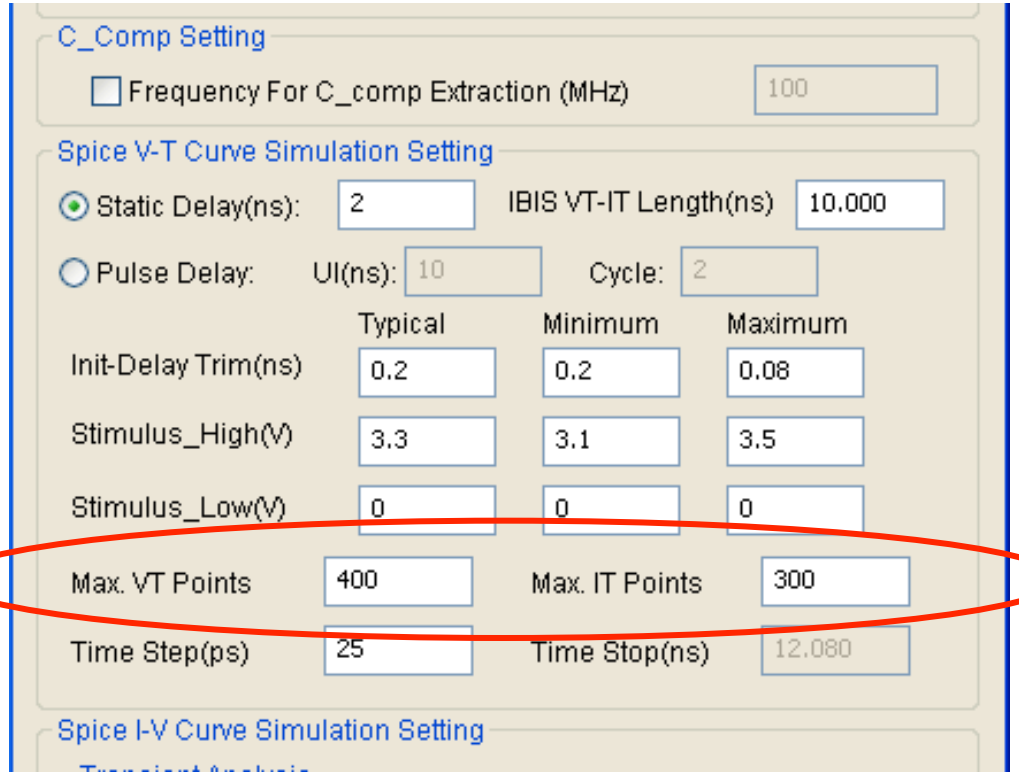
Stimulus Rising / Falling edge control for IBIS VT extraction



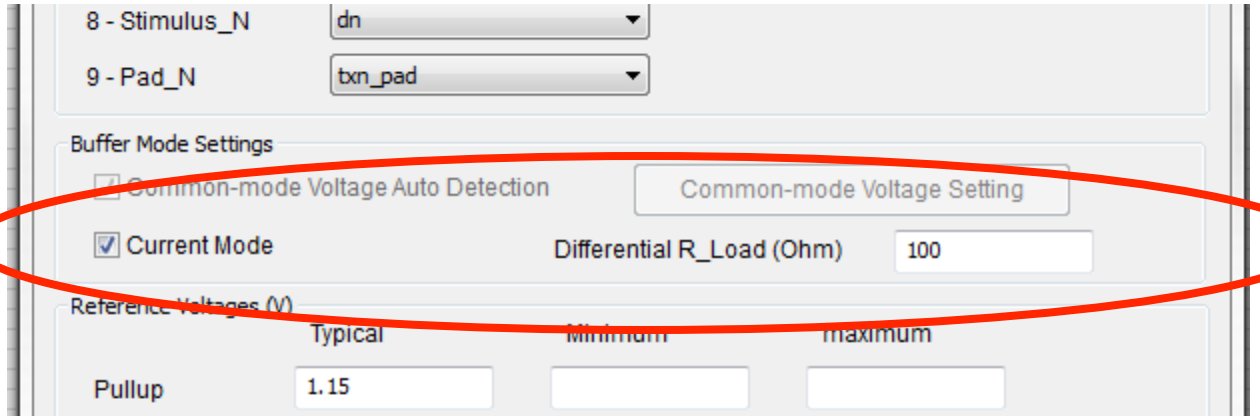
This feature enables the total control for VT extraction stimulus configurations. It will allow to generate more accurate models for new advanced buffers

IBIS VT/IT Maximum Point Number Control

The most of times, VT/IT curves will only need few hundred points for keeping the accuracy of the models. This maximum number control will allow to minimize the file size significantly.

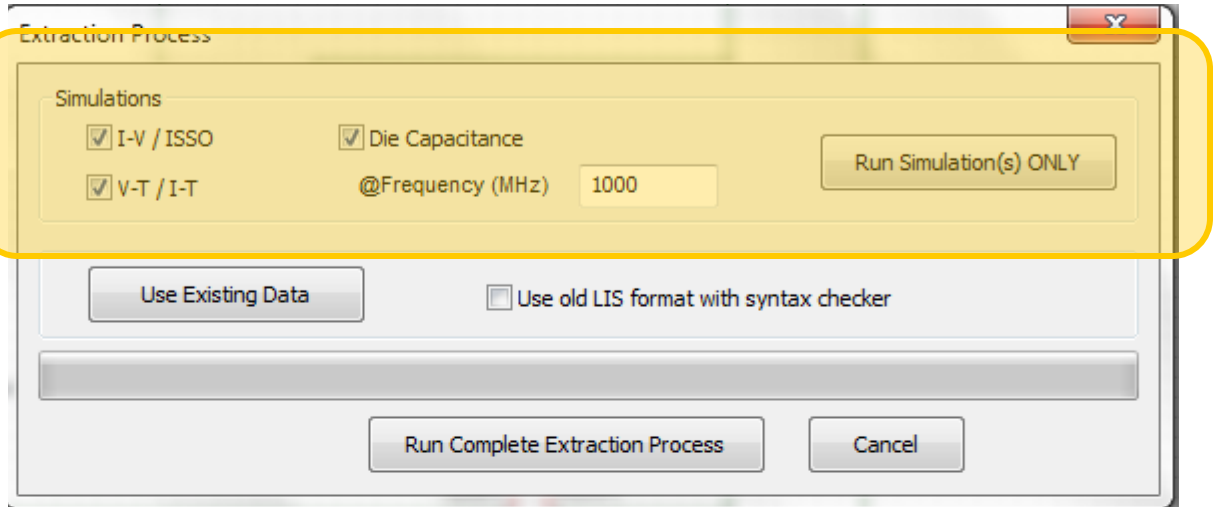


Current-Mode True-differential pair Support



Out of ordinary IBIS extraction methods with enhanced Weighted Best Point Reduction algorithm for accurate current-mode true-differential IBIS buffer model extractions

Selectable Extraction Simulation ONLY options for time consuming long simulations



Using script for simulation queue. Simulate first, extraction process using existing data later

Enhanced batch-mode operation for large number buffer generations in one project

```
C:\IOMETH>bibisgen

SimDE MODEL batch command program - IBISGEN
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Missing SimDE MODEL Project(.prj) file

Help:
Usage: bIBISGen (project file .prj) <option>
 Options: (case sensitive)
 -SimOnly: Simulations Only
 -CapSimFreq: DieCap Extraction Frequency in MHz (need to be used with -SimOnly option)
 -h or -Help: Help Contents
Examples: bIBISGen test.prj
          bIBISGen test.prj -SimOnly
          bIBISGen test.prj -SimOnly -CapSimFreq 2500

C:\IOMETH>_
```
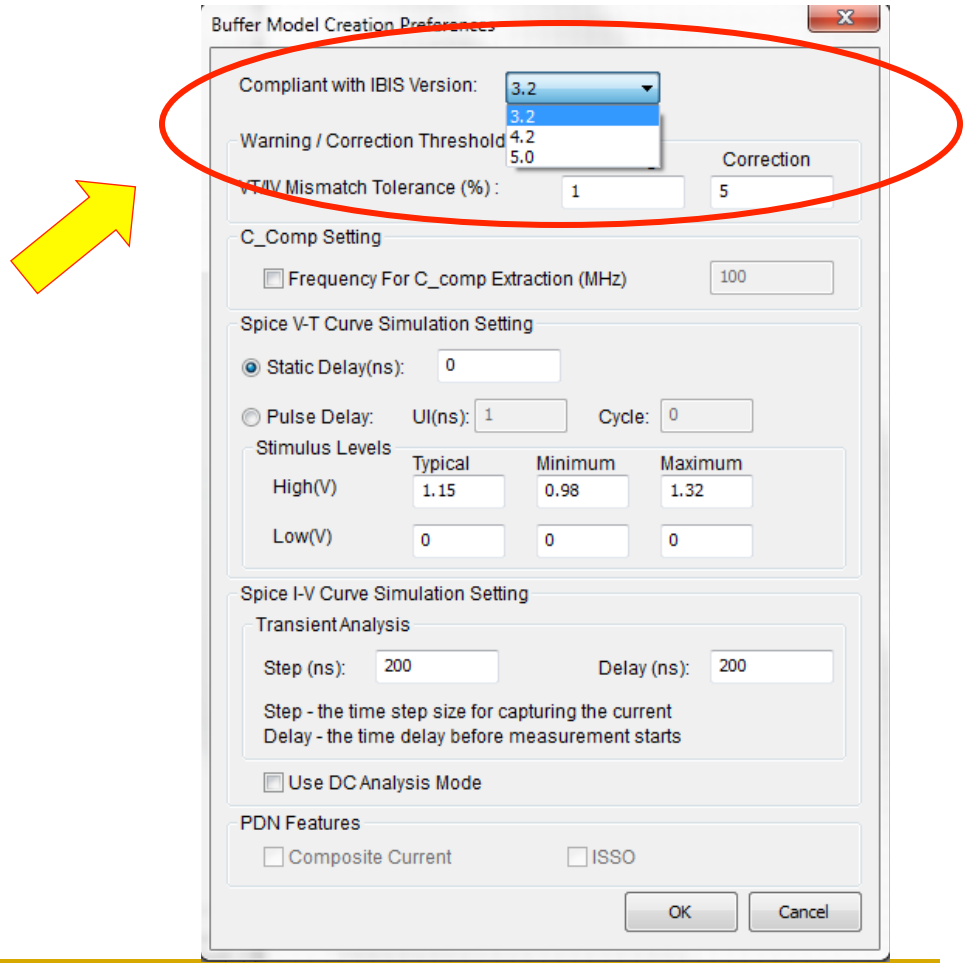
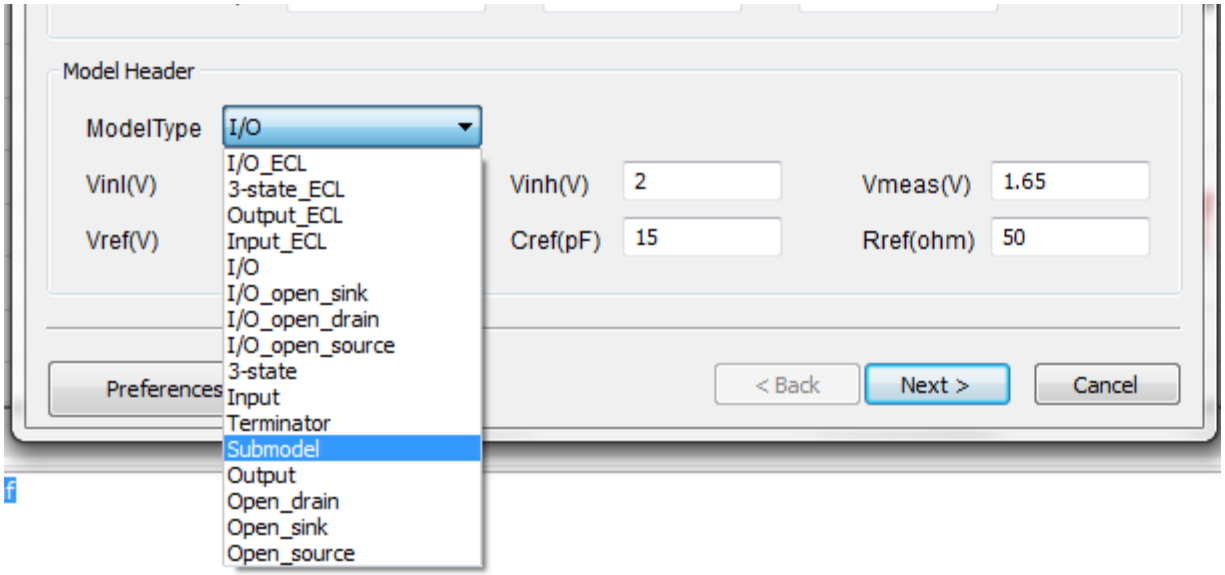

Flexibility for IBIS version 3.2/4.2/5.0 buffer model generation to fit your customer needs

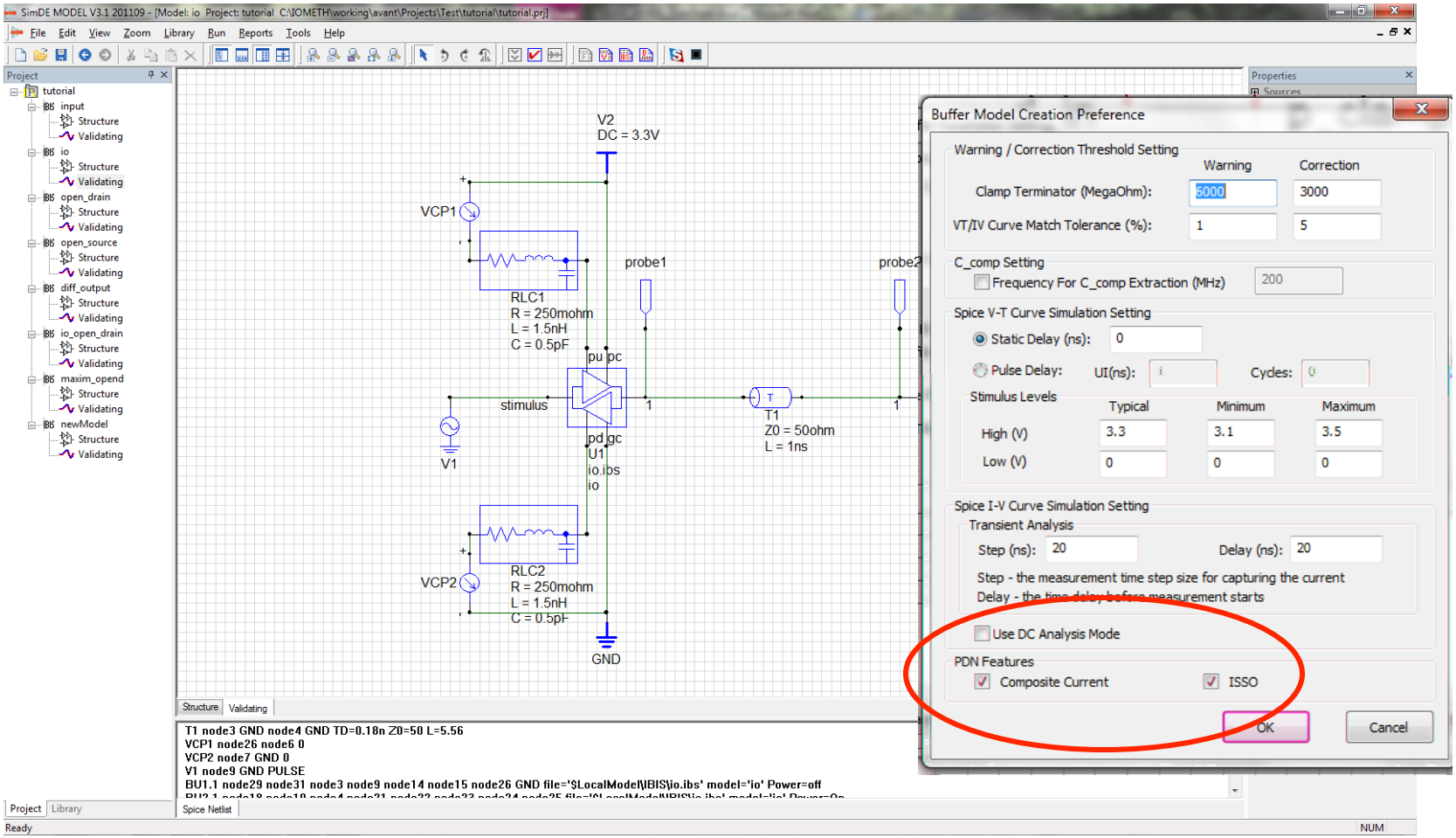
Choose the IBIS version your customer needs. SimDE™ will automatically generate version compatible IBIS buffers.



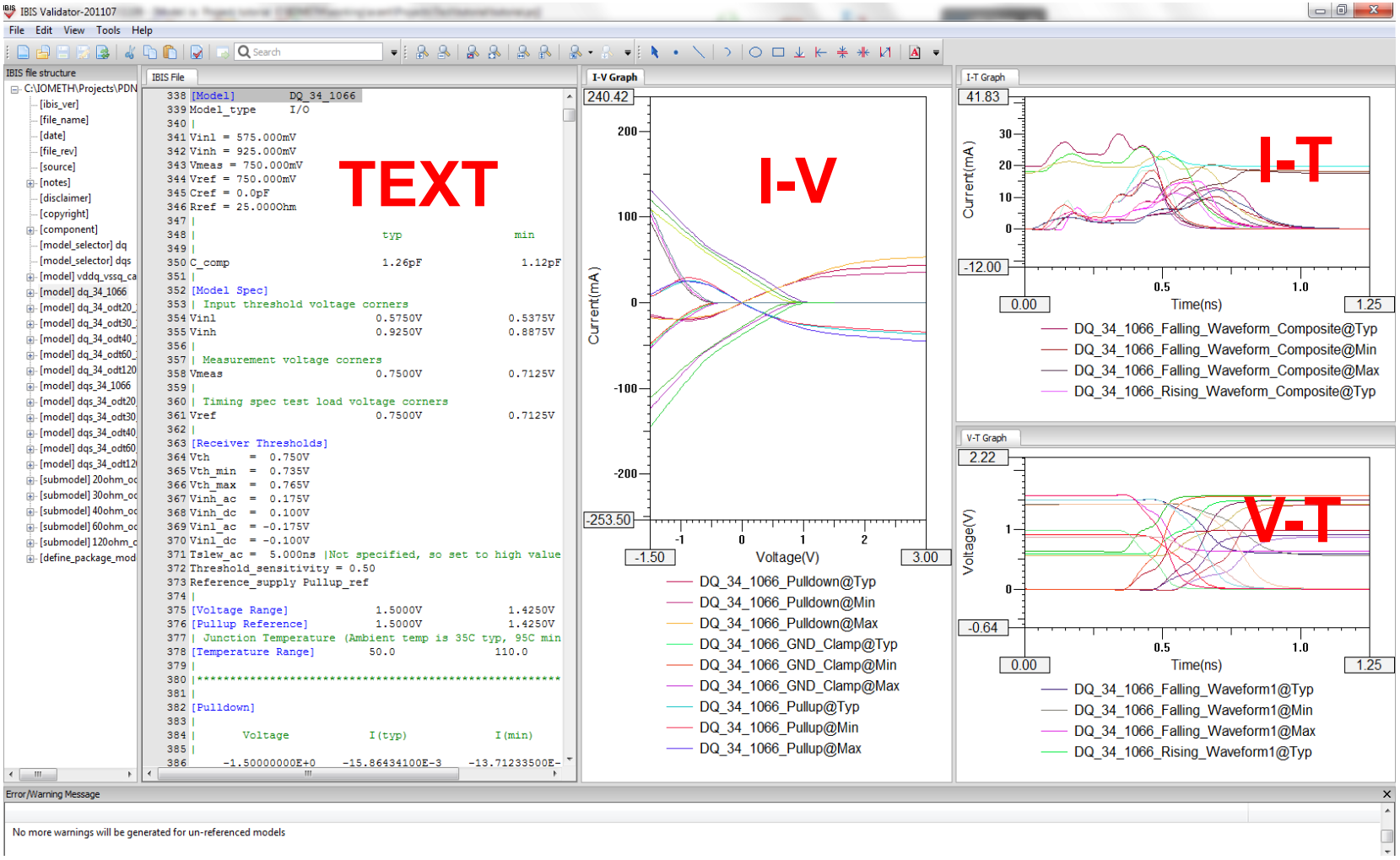
Supports SubModel (Dynamic Clamping) IBIS model type extractions



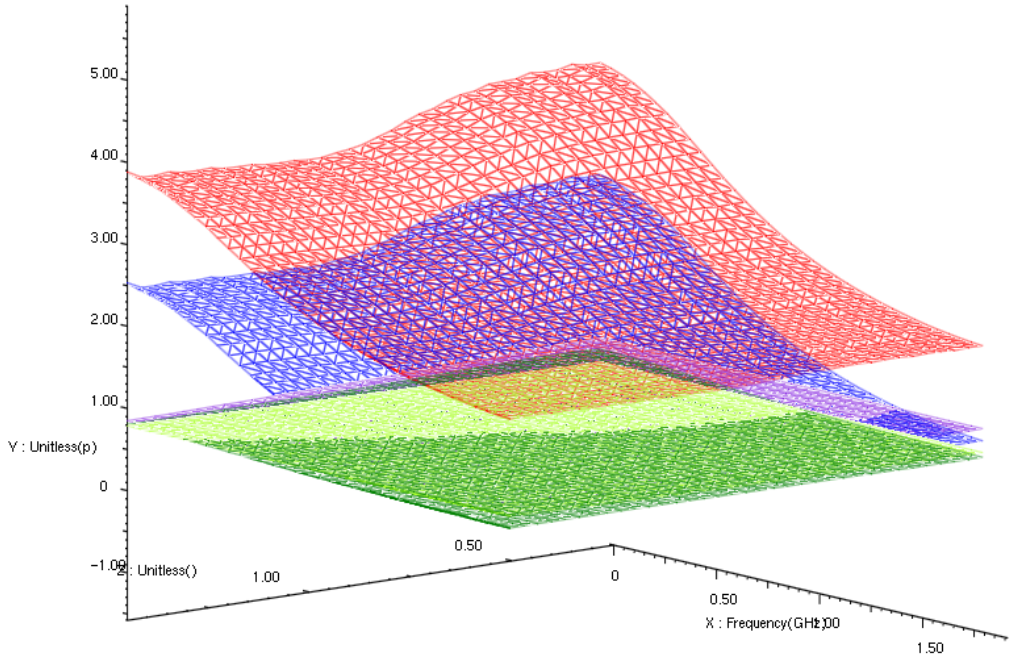
IBIS 5.0 PDN features with build-in test circuit



IBIS VALIDATOR

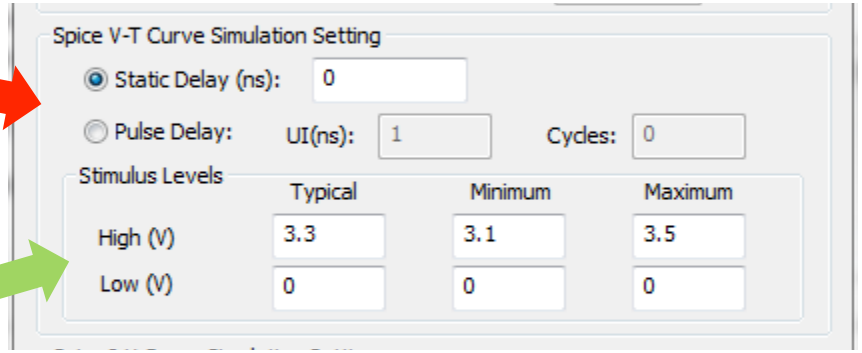


WAVFORM 3D View

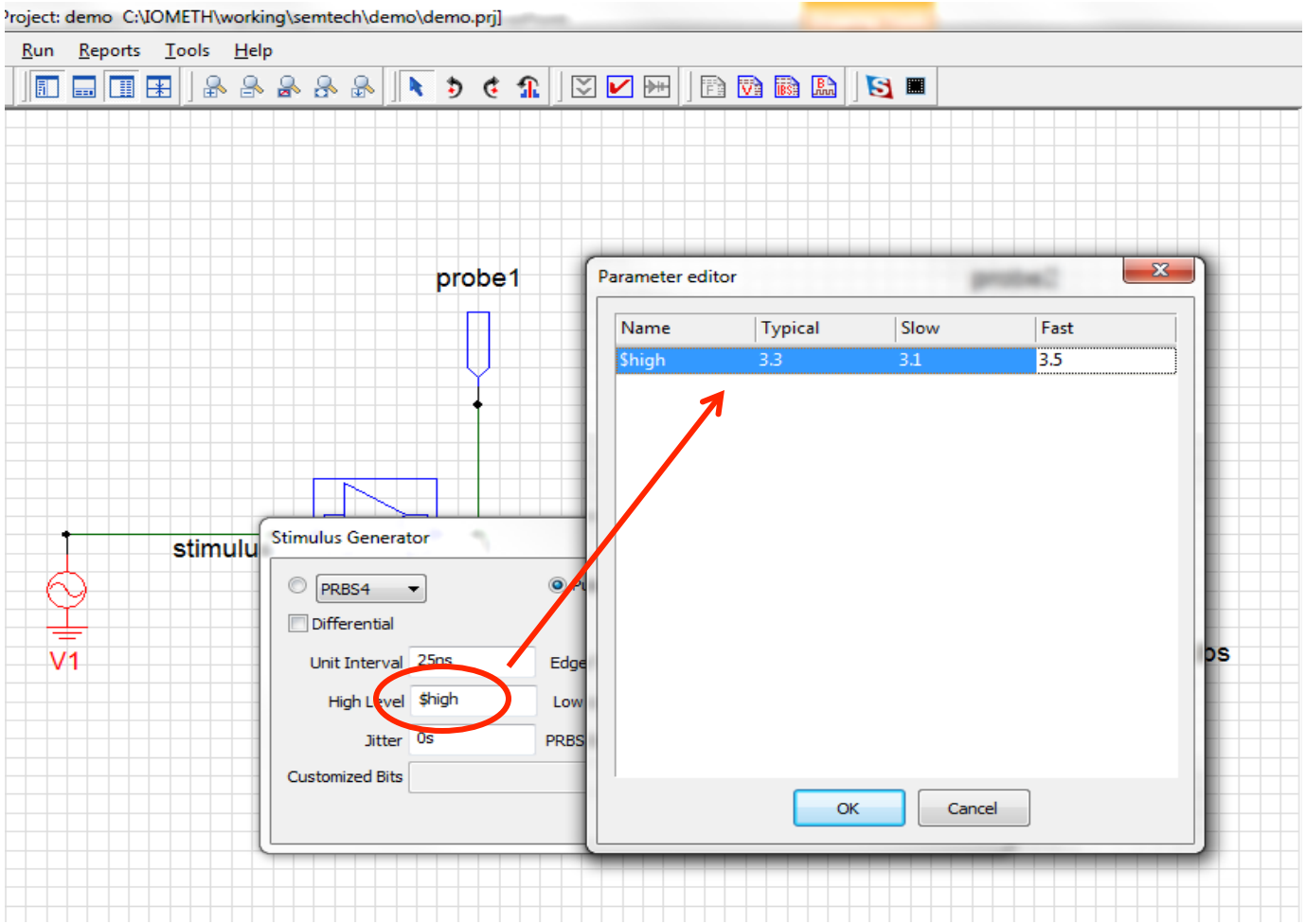


Flexible stimulus controls for IBIS model generations

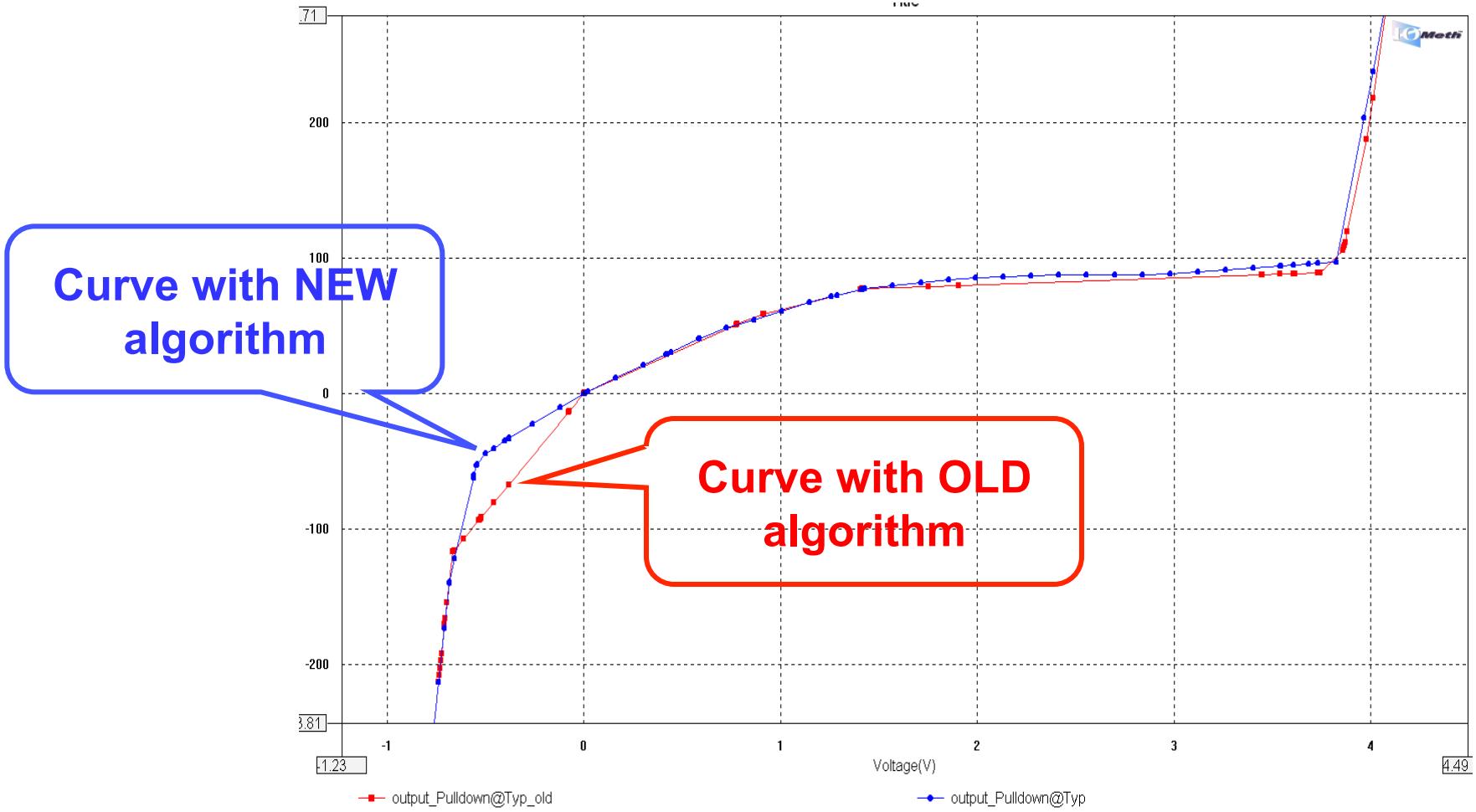
- Delays
  - Static
  - Pulse
- Levels
  - High/Low
  - Typ/Min/Max



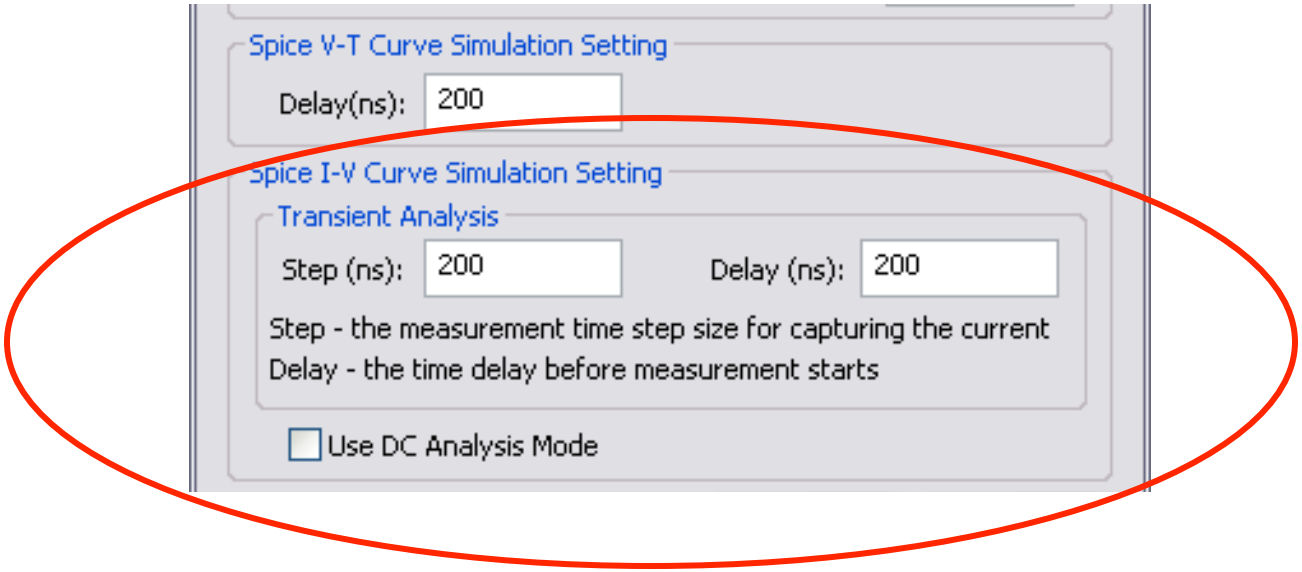
Stimulus level control for different corner IBIS validations



Advanced “weighted” Best-Point algorithm for I-V curve representations



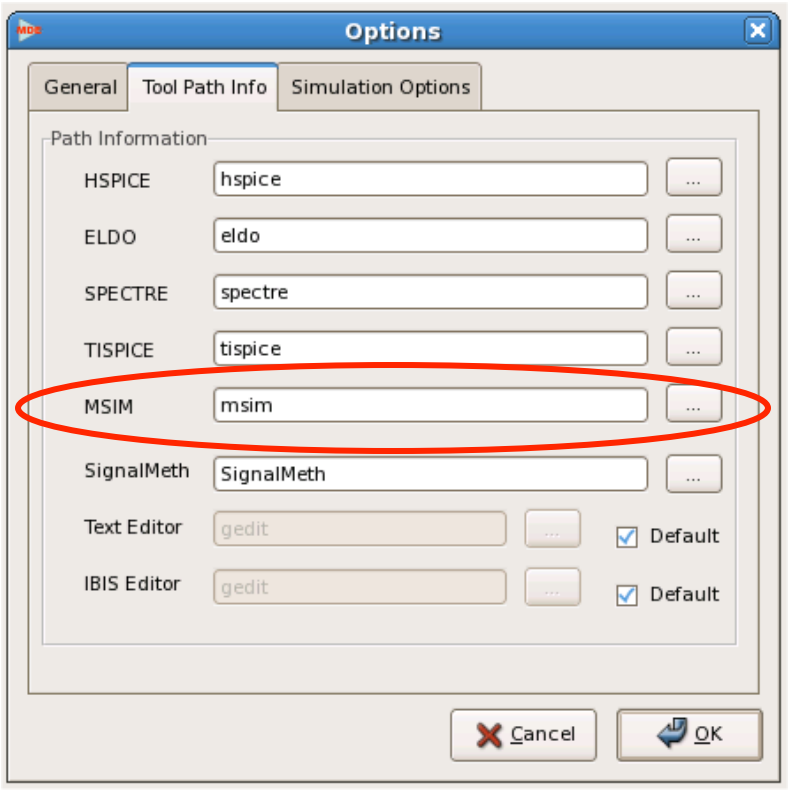
Both Transient and DC analysis modes available for I-V curve extractions

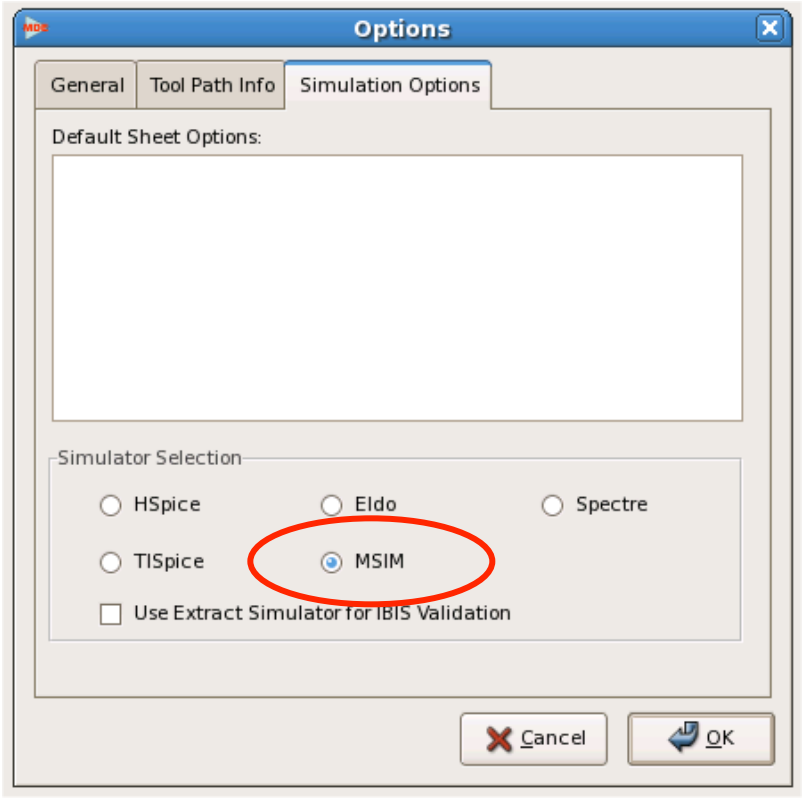


Insured to get the best result for I-V curve extractions

Spectre DC Analysis mode is not available in V2.2

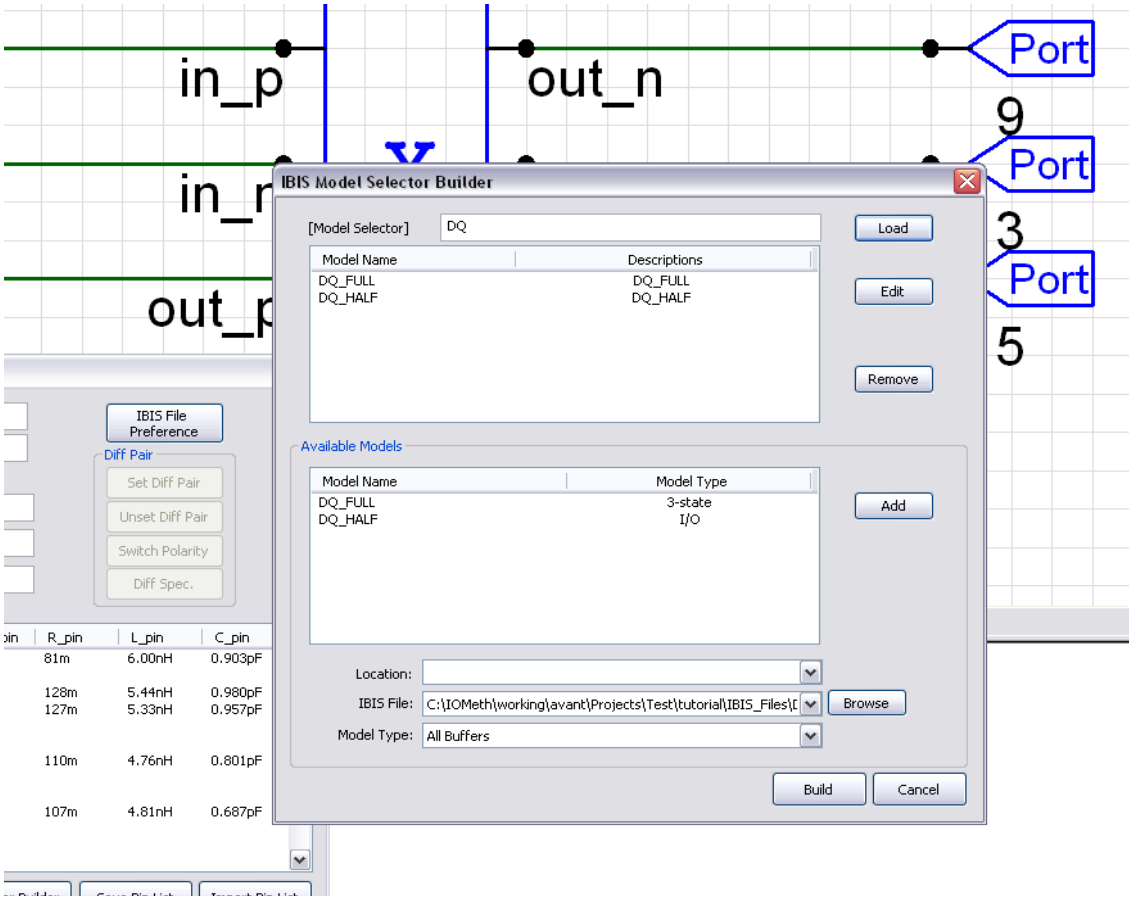
Integrated MSIM simulator support for extraction and validation





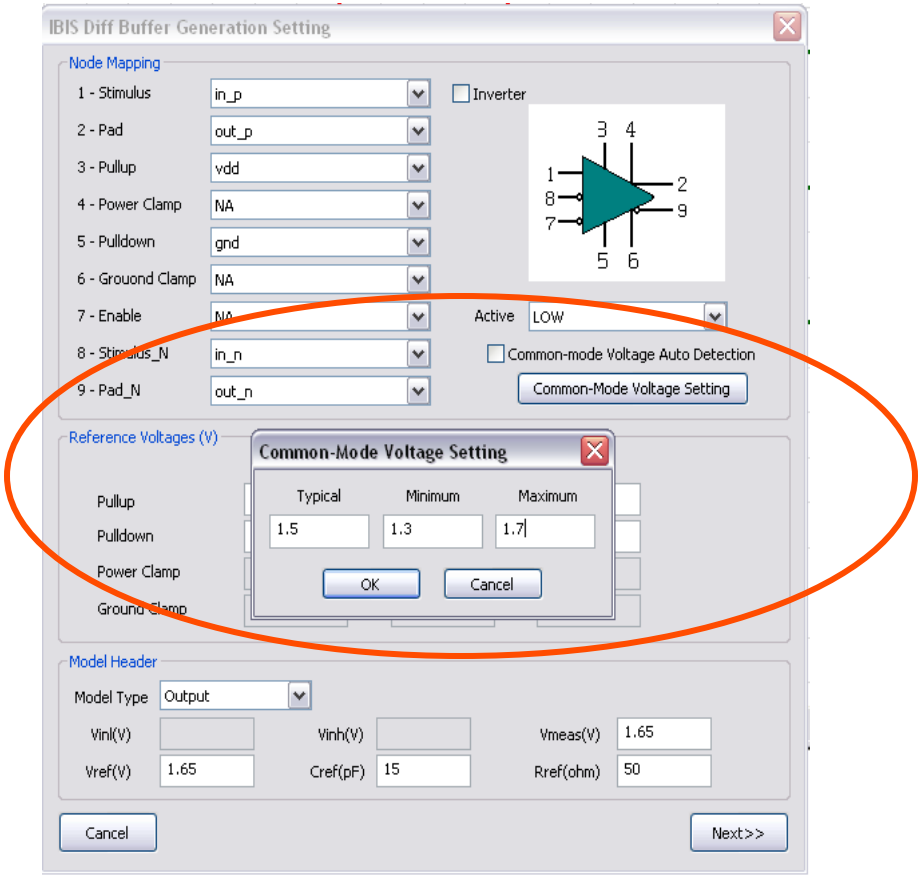
Model Selector Builder

- Build [Model Selector] from different IBIS files
- Load, Edit, Remove functionalities
- Can be added as a pin in IBIS file generation wizard

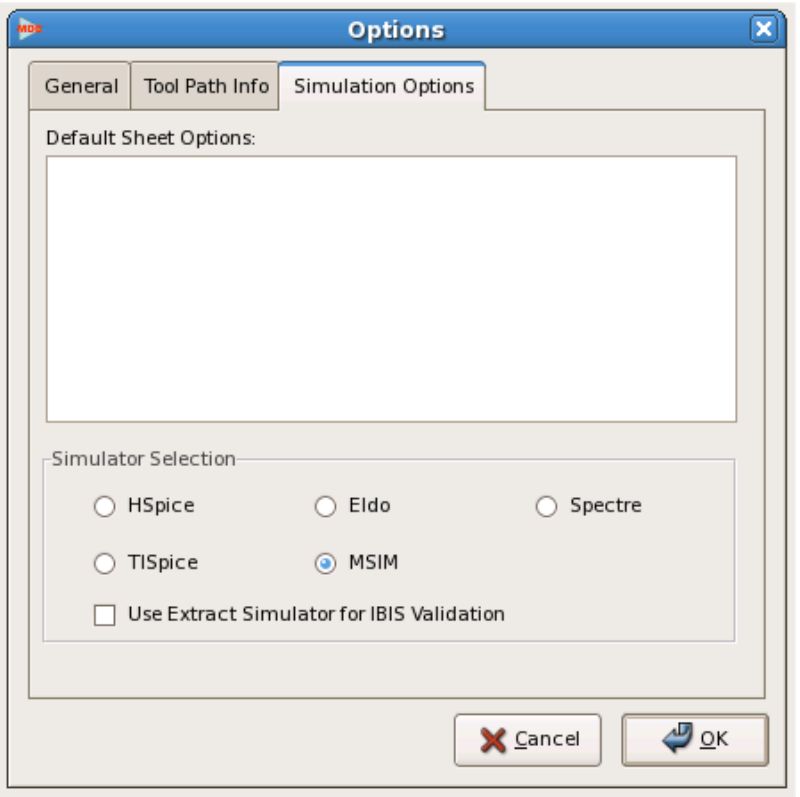


Manual Common-mode voltage setting option for differential pair IBIS extractions

- Manual common-mode voltage setting option
- Auto-detection still available
- Increase IBIS buffer model accuracy by setting precision common-mode voltages for each corners

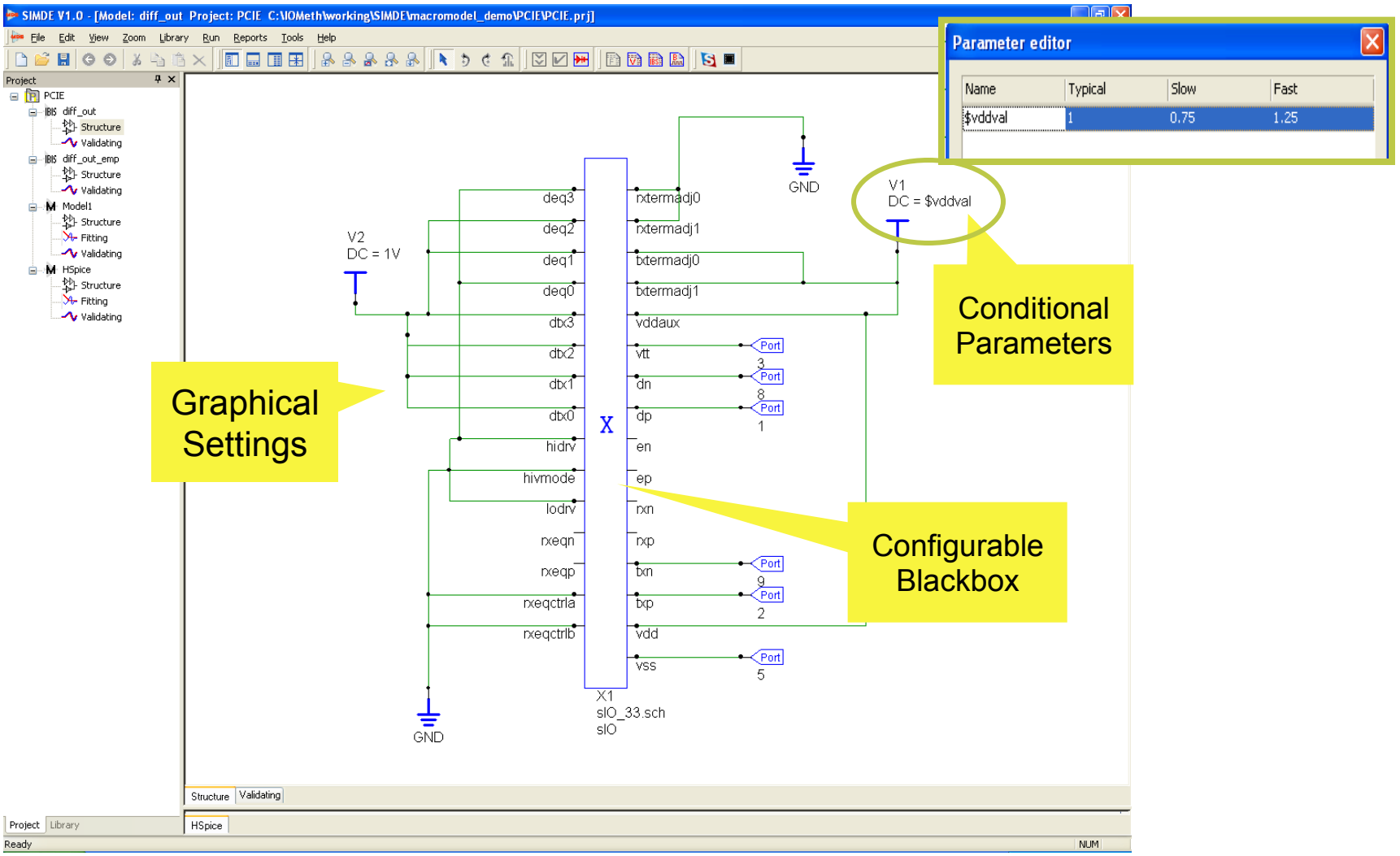


Multiple Simulator integrations

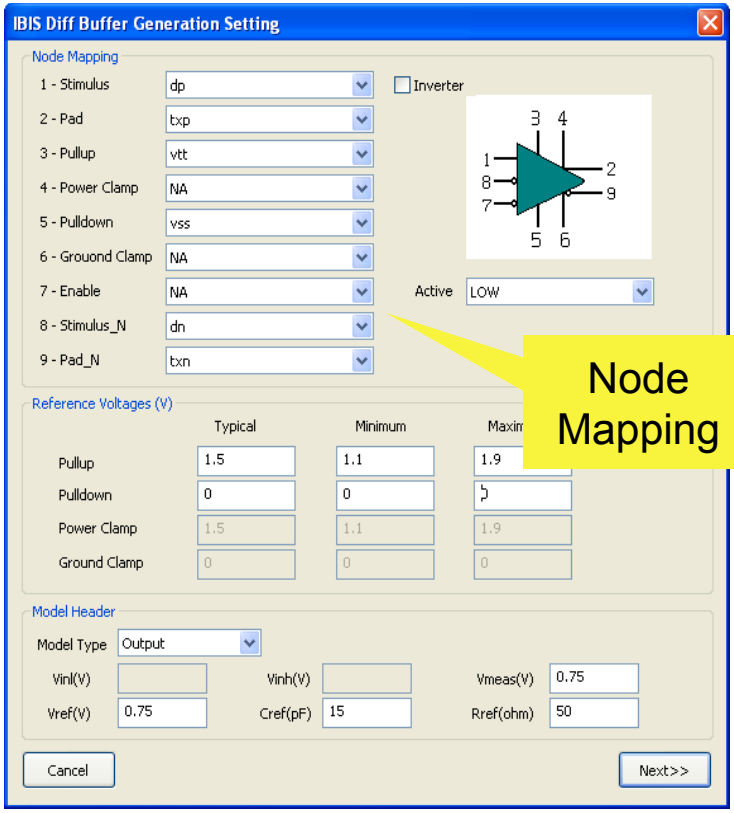


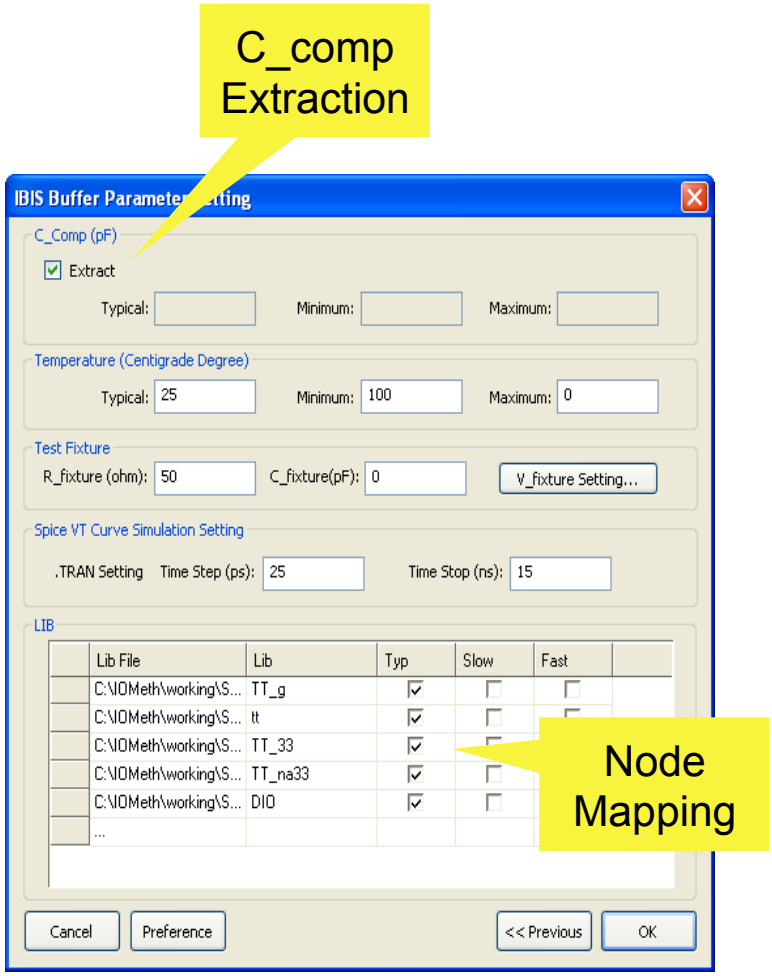
- Supports
  - Synopsys HSpice
  - Cadence Spectre
  - Mentor Eldo
  - Texas Instrument Spice3
  - Legend MSIM
- Seamless switching capability

IBIS Buffer Generation



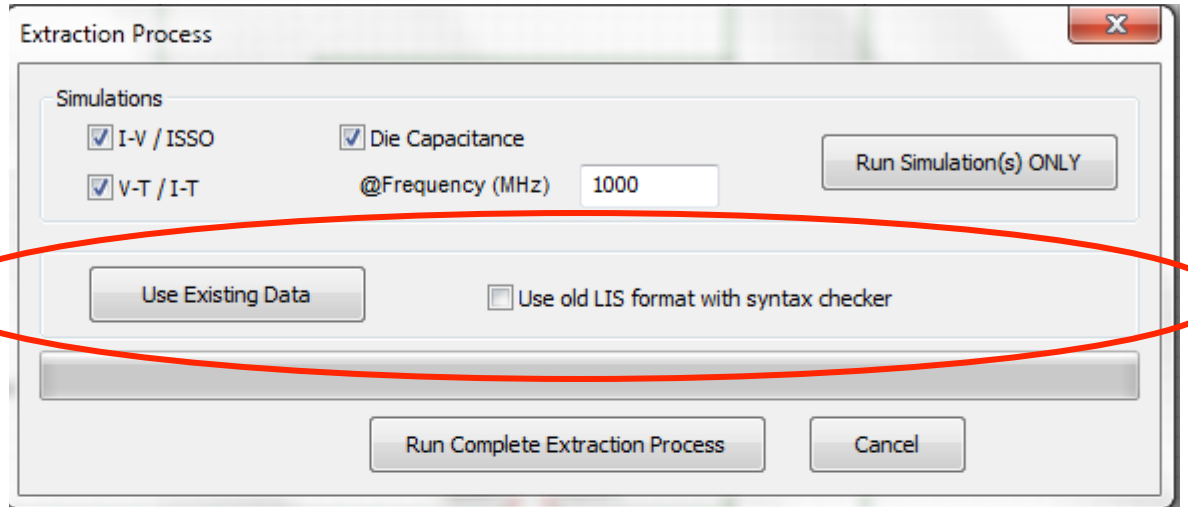
IBIS Generation Setting Wizards



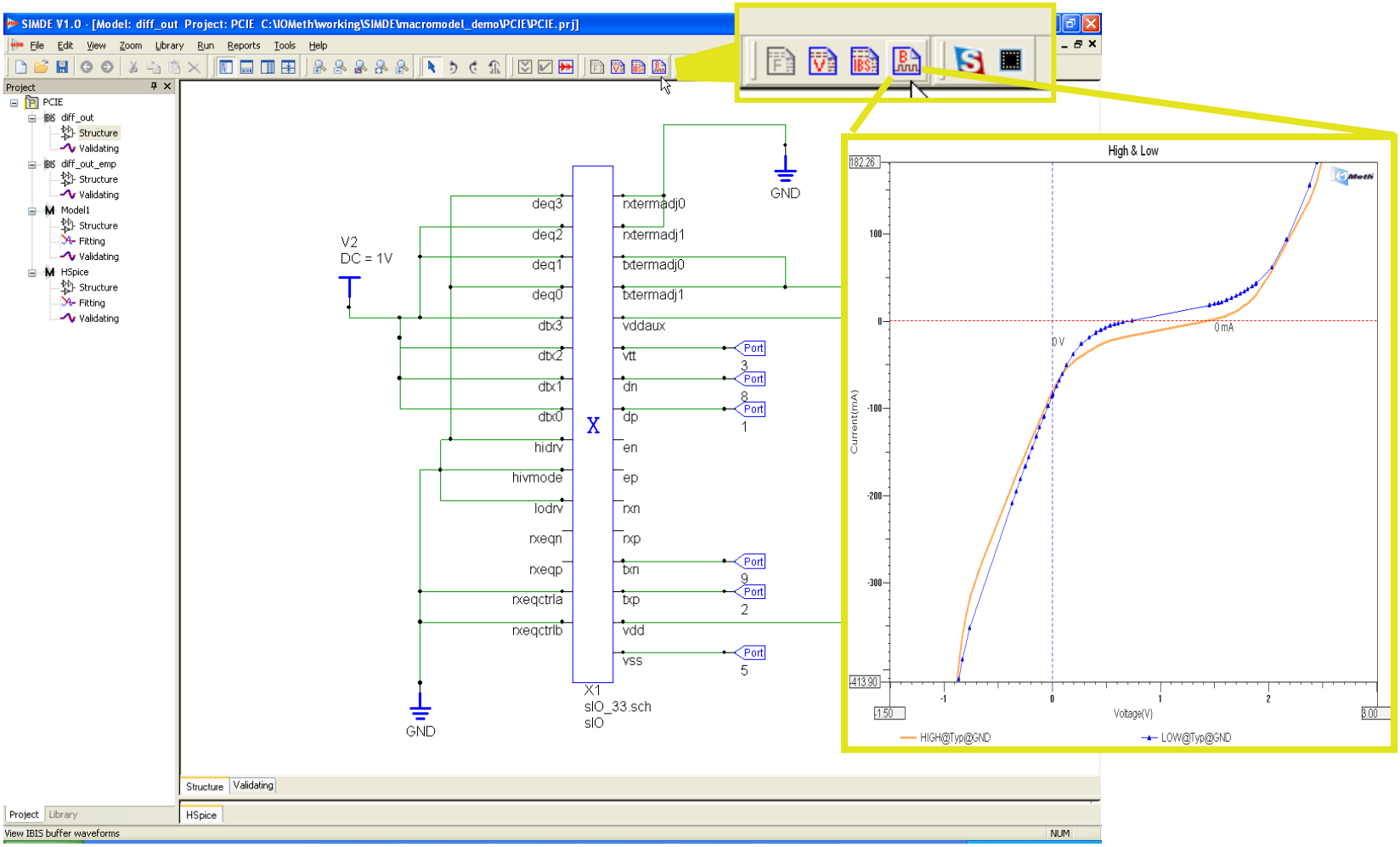


Extraction with existing data

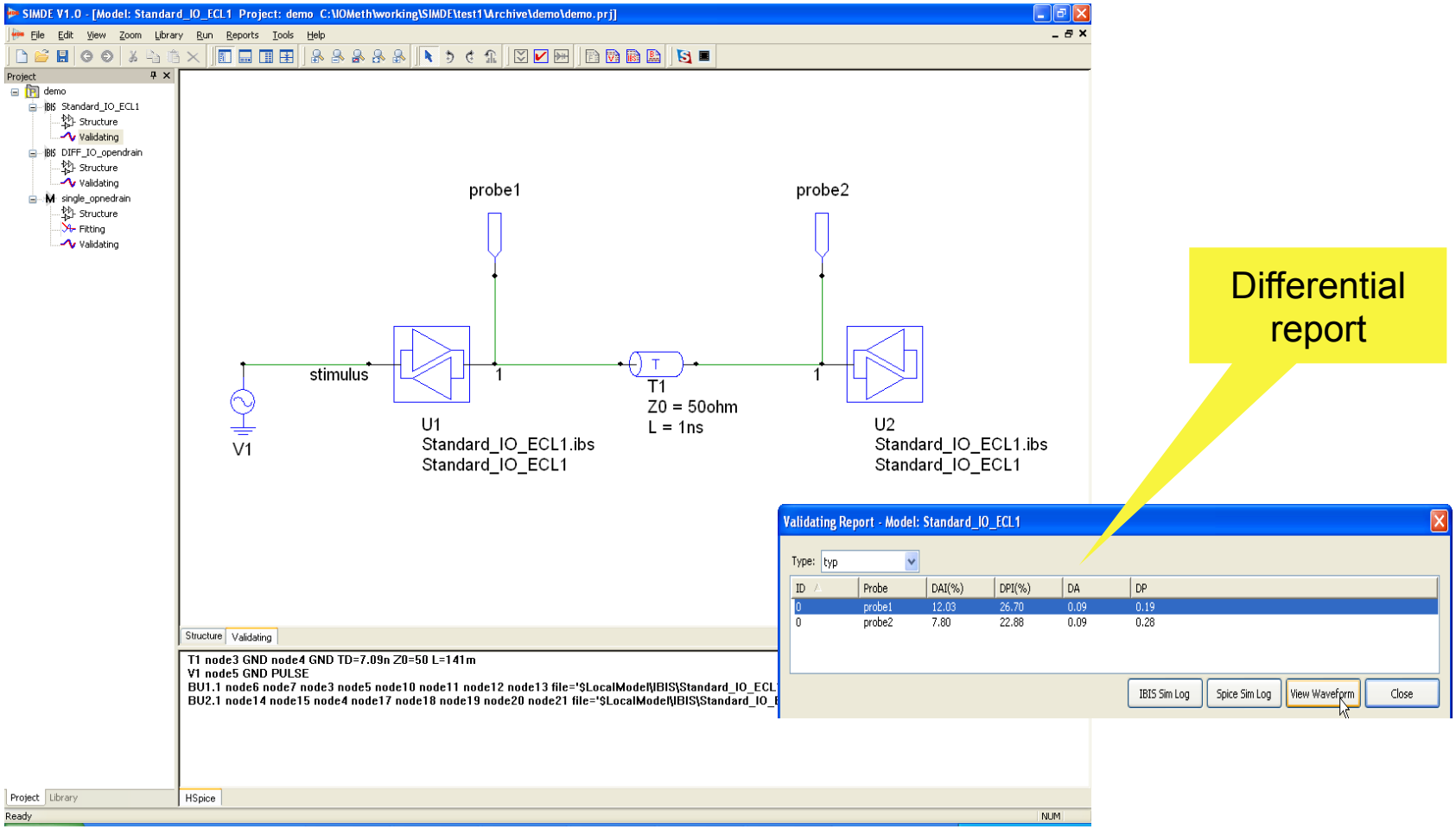
- Save simulation time
- Capable for other simulator and / or measurement output
- With syntax checker



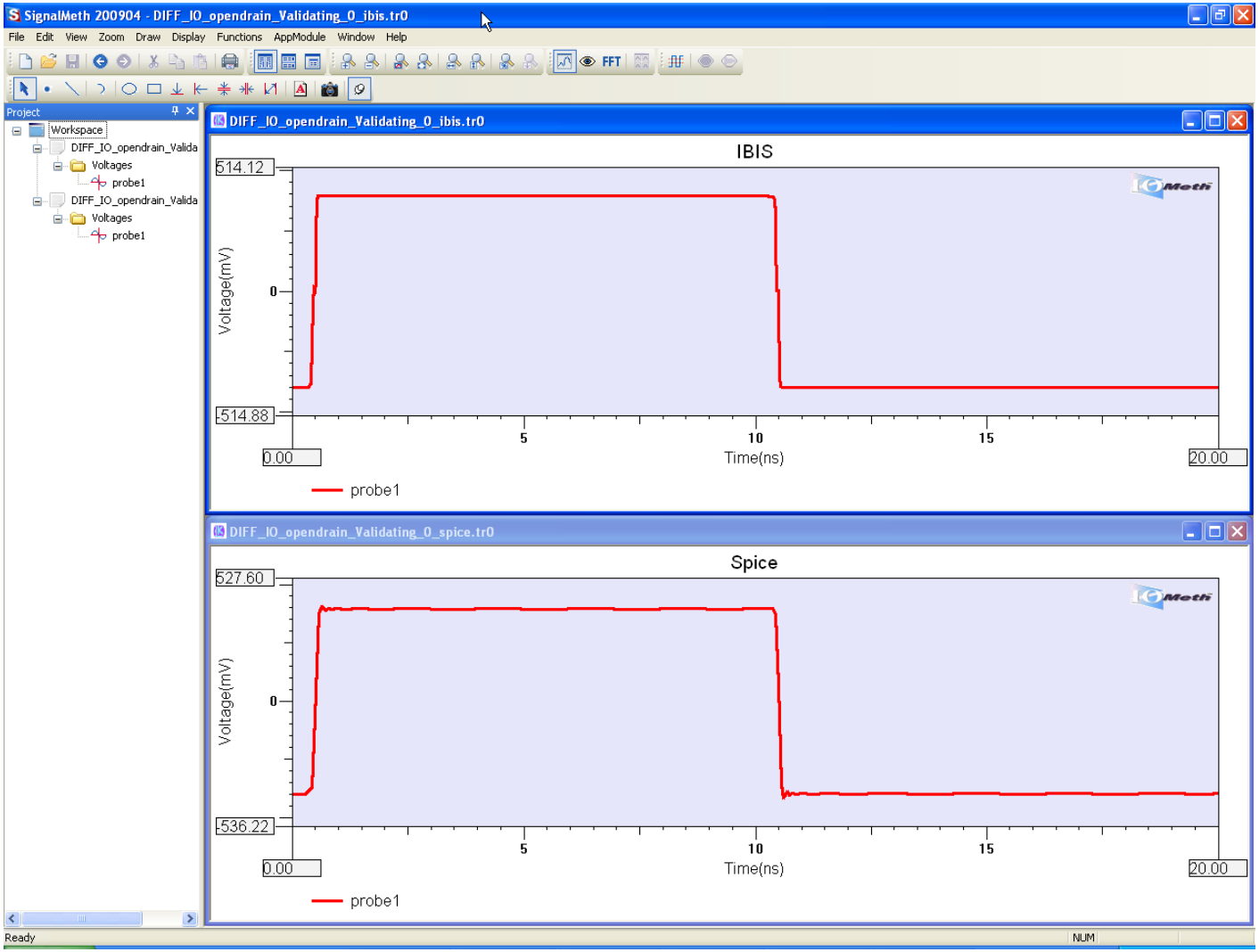
Easy IBIS curve inspection



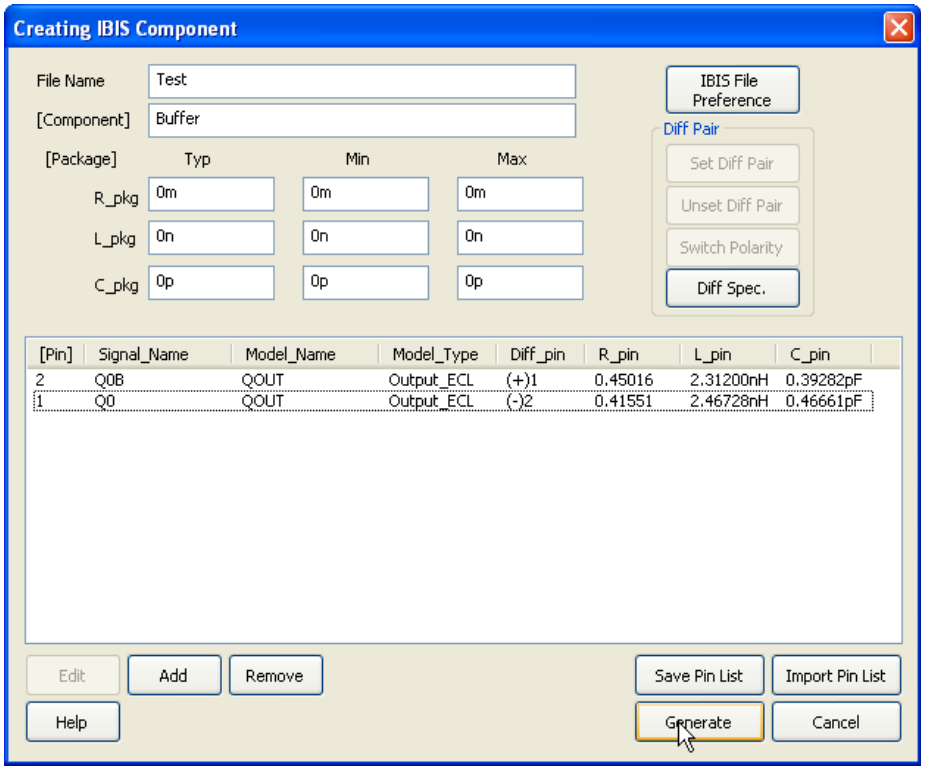
Build-in Test circuit and Flexible Topology Editor for Validations

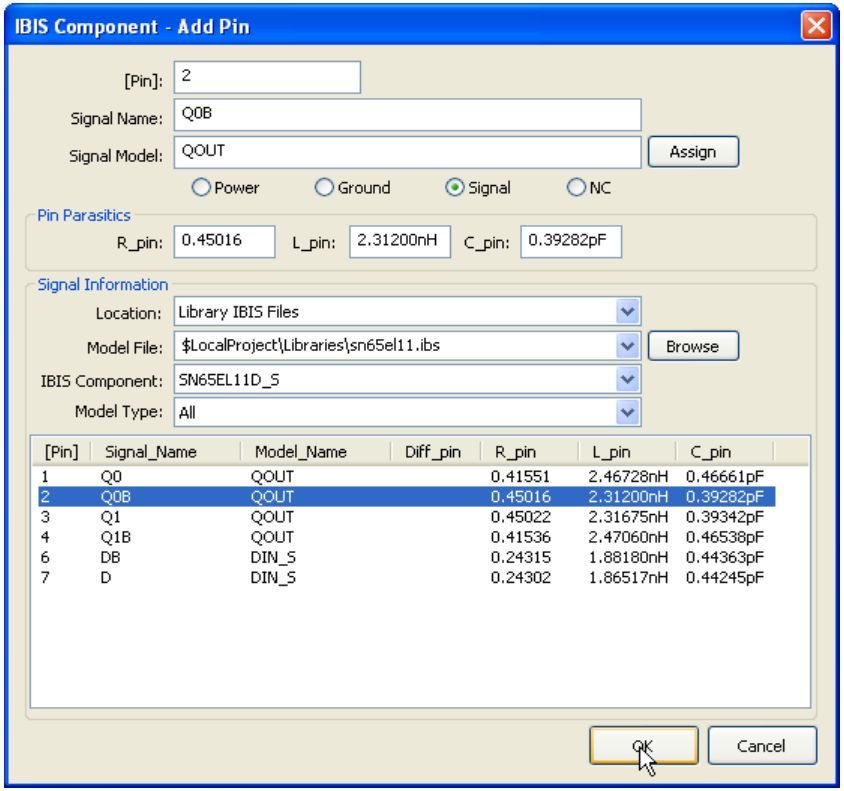


Seamless Validation

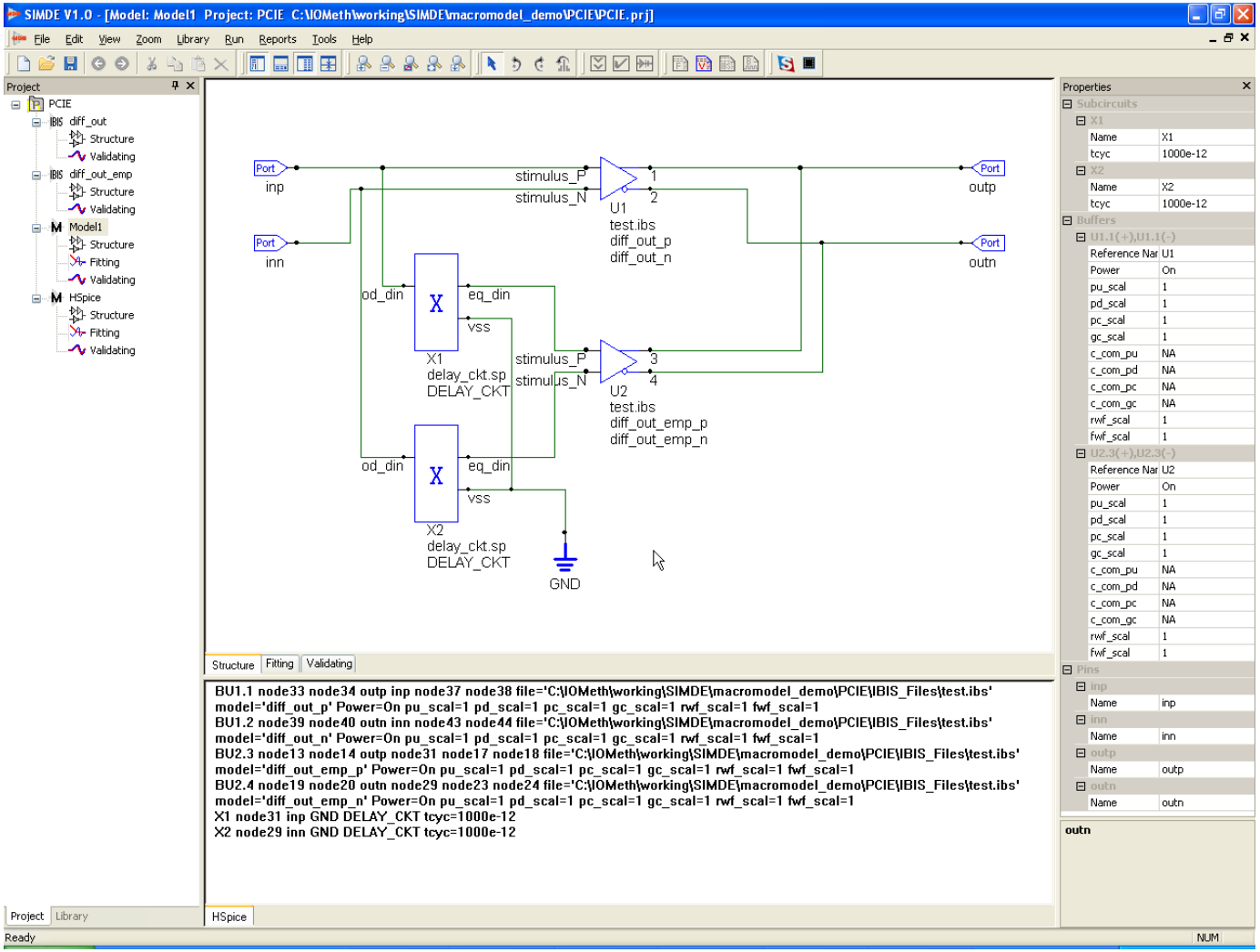


Comprehensive IBIS File Builder

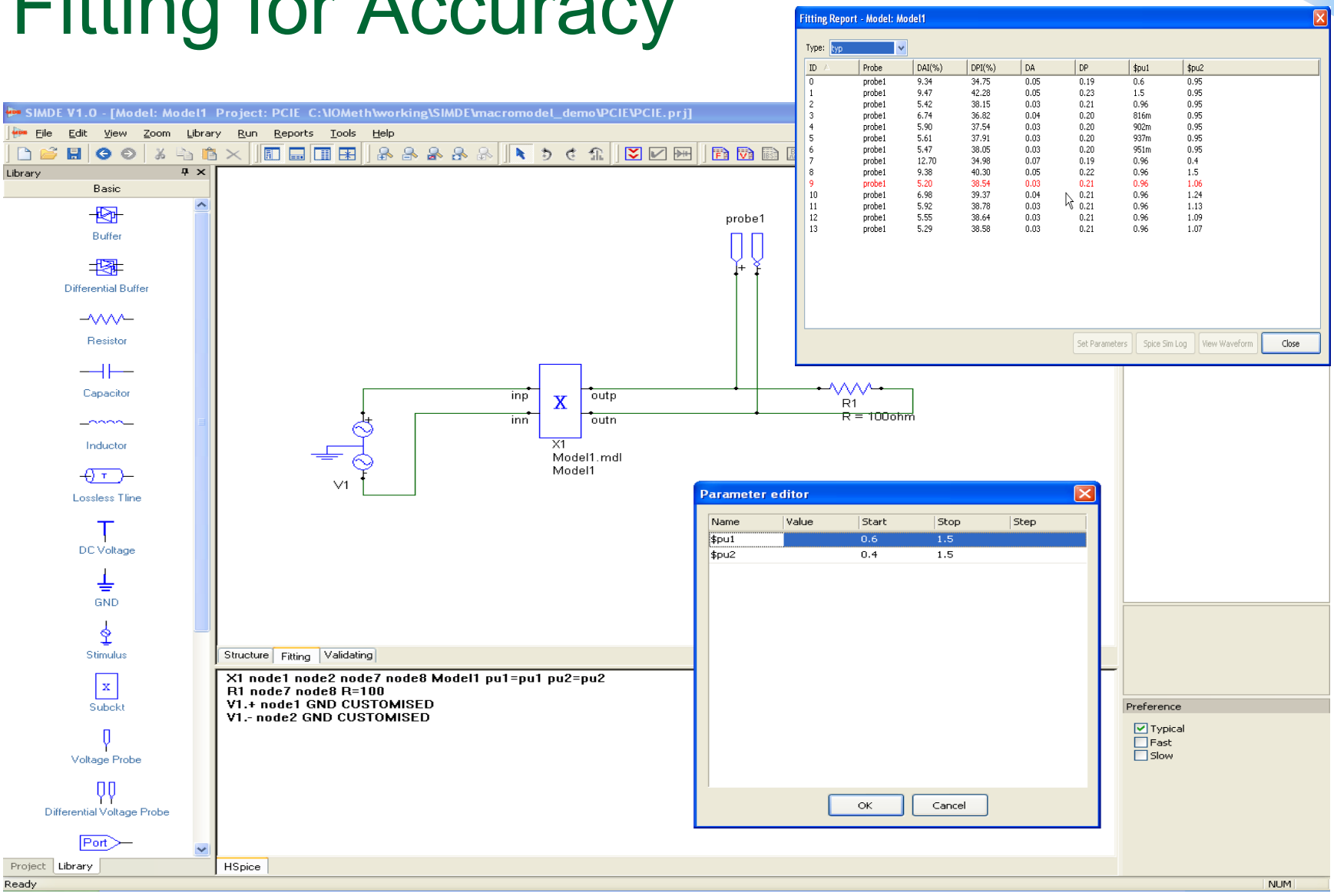




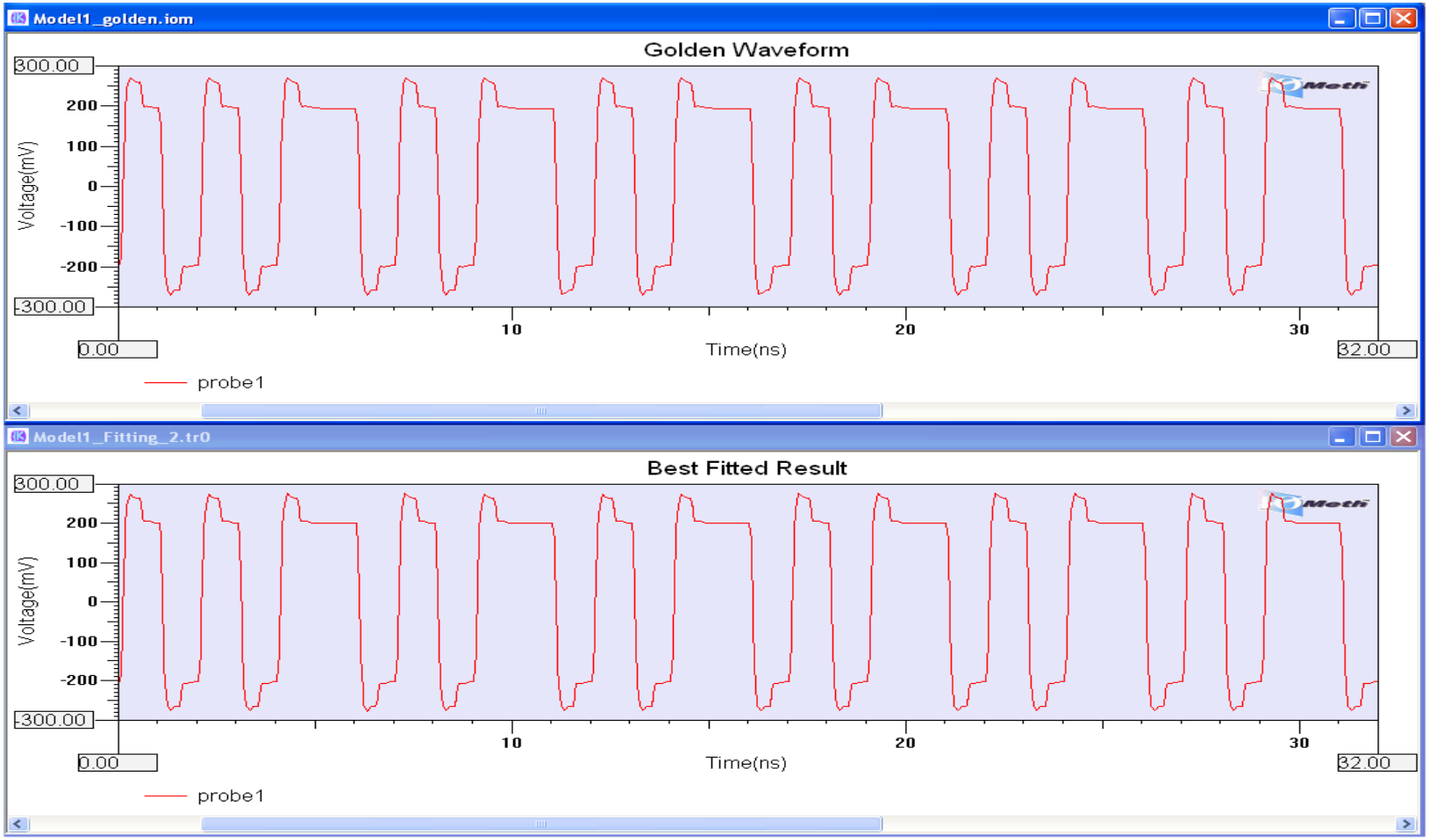
Macromodel Builder



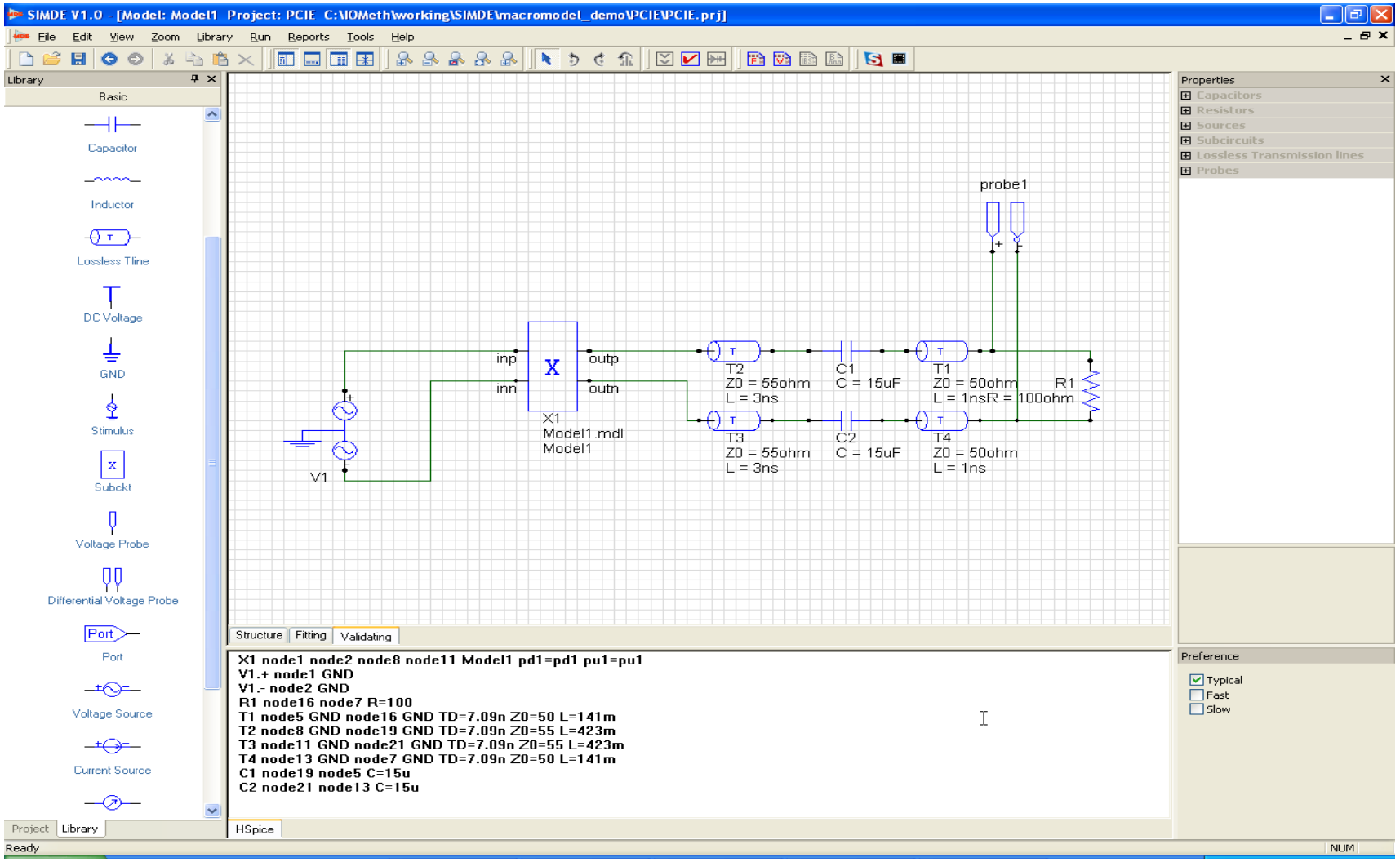
Fitting for Accuracy



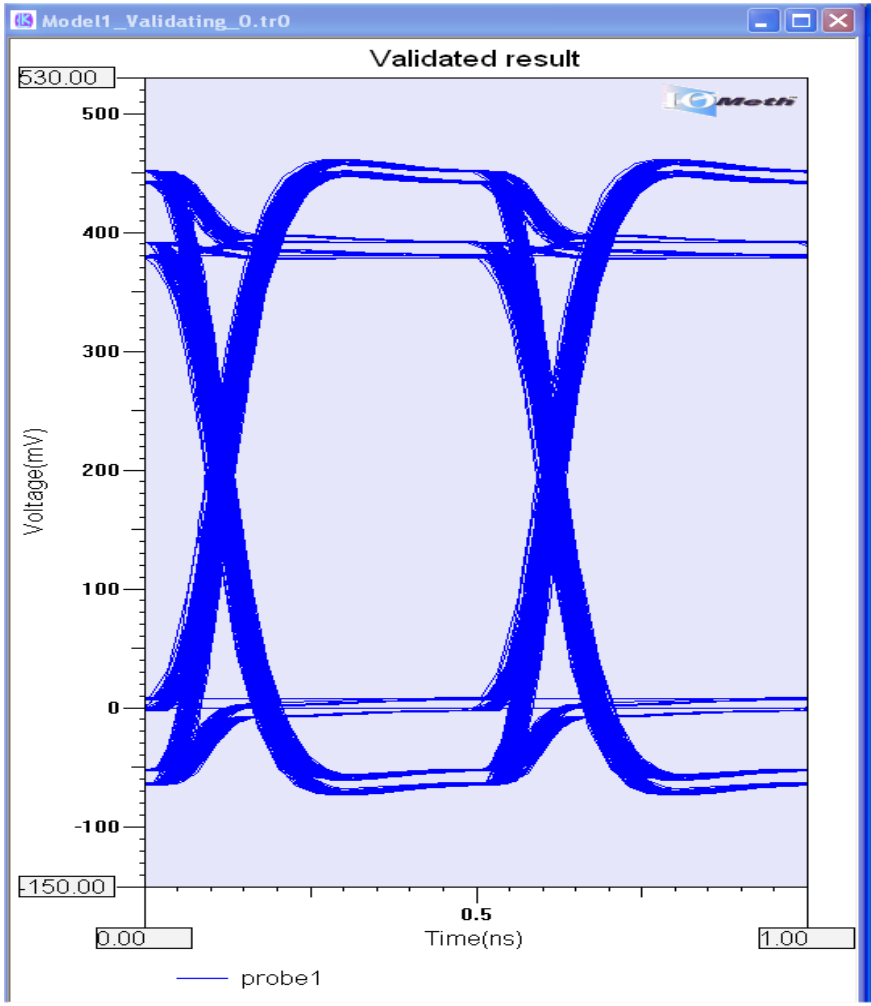
Fitting Result (DPI:1.14%, DAI:1.49%)

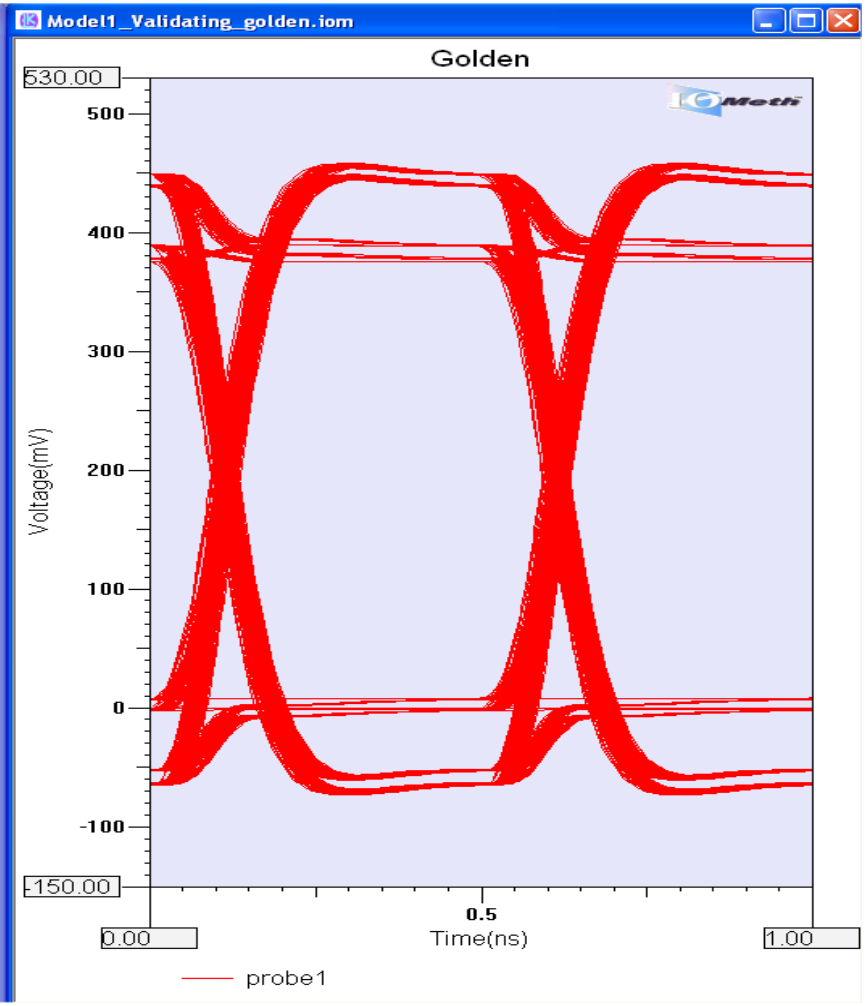


Free-Form Topology Editor for Validation



Validation Result





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