

## Extracted parasitic simulation using Calibre

The most successful and reliable method for simulating extracted parasitics is to use a *spectre* netlist. Unfortunately, this is not easy to set up.

*Calibre* produces a *spectre* netlist plus two other files (if RC extraction is used, only one other file, however, if C-extraction only is used) containing the parasitics.

In the following example (RC extraction) the extracted cell is called *comp*, so the netlist is:

*comp.pex.netlist*

which includes two files

*comp.pex.netlist.COMP.pxi*

and

*comp.pex.netlist.pex*

Each of them calls the next one via an *Include* statement.

Examining *comp.pex.netlist* shows that the netlist defines a subcircuit  
subckt comp ( AVDD GND COMP\_OUT CONV DAC\_OUT HOLD IBIAS ONCOMP RAZ )

This line in the netlist will be needed later.

The next step is to create a *spectre* view which is achieved by copying the *symbol* view from within the library manager to a *spectre* view.

Next, in the *icfb* window use the *Tools/CDF/Edit* menu to edit the cell's CDF.

The CDF type should be set to *Base* and then browse to find the appropriate cell.

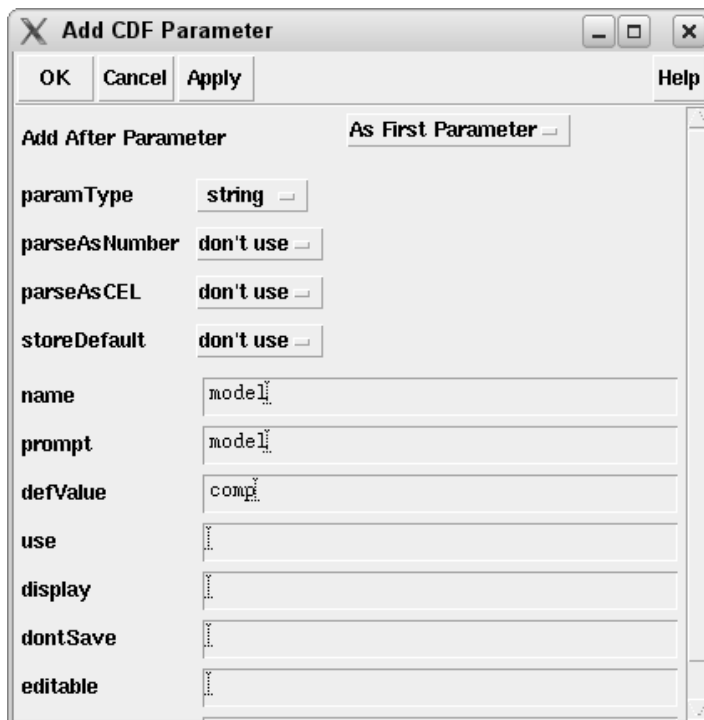
In the component parameters section, click *Add* to open the dialogue box shown in *Figure 1* and set *name* = *model*, *prompt* = *model* and *defValue* = *comp* (the name of the subcircuit defined in *comp.pex.netlist*), then click *OK*.

In the simulation information section, you may need to add the pin list in the box next to *spectre*, this can be copied from the subcircuit. The completed form should look something like *Figure 2*. Now, within *ADE* add the netlist to the model setup, but beware.... the case tends to be wrong between the netlist and the model files as provided by the foundry! If when you try to simulate there are numerous models that cannot be found, this may be the problem and you must edit the netlist to change to appropriate case.

Doesn't work with a *patchCord* in the schematic (use *vdc=0* instead).

In the simulator options, beware to use the appropriate *scale* parameter.

Good luck!



**Add CDF Parameter**

OK Cancel Apply Help

Add After Parameter **As First Parameter**

paramType string

parseAsNumber don't use

parseAsCEL don't use

storeDefault don't use

name model

prompt model

defValue comp

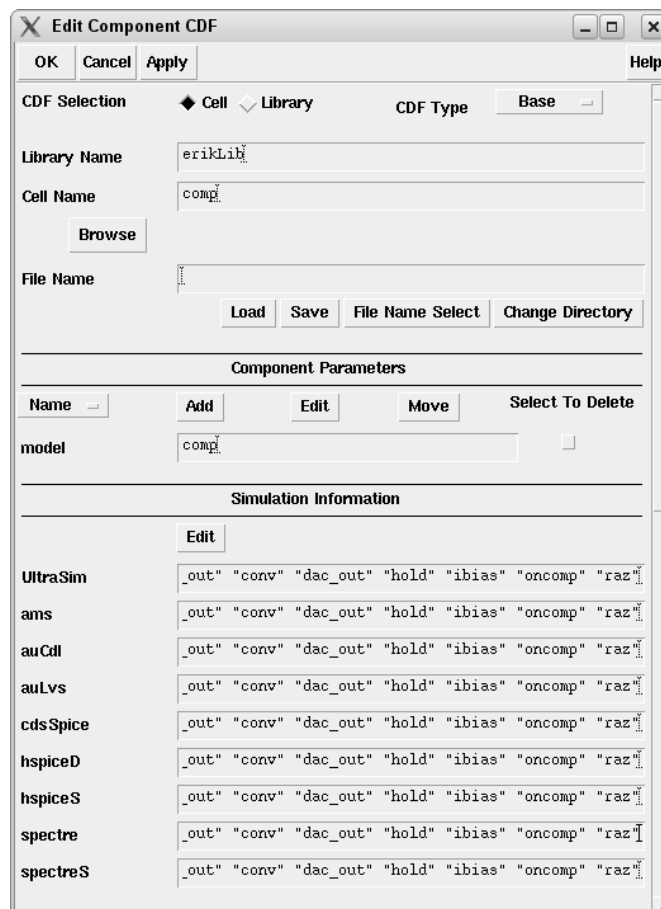
use

display

dontSave

editable

Figure 1: Add CDF Parameter



**Edit Component CDF**

OK Cancel Apply Help

CDF Selection ☒ Cell ☐ Library CDF Type Base

Library Name erikLib

Cell Name comp

Browse

File Name

Load Save File Name Select Change Directory

**Component Parameters**

Name	Add	Edit	Move	Select To Delete
model	comp			<input type="checkbox"/>

**Simulation Information**

	Edit
UltraSim	_out" "conv" "dac_out" "hold" "ibias" "oncomp" "raz"
ams	_out" "conv" "dac_out" "hold" "ibias" "oncomp" "raz"
auCdl	_out" "conv" "dac_out" "hold" "ibias" "oncomp" "raz"
auLvs	_out" "conv" "dac_out" "hold" "ibias" "oncomp" "raz"
cdsSpice	_out" "conv" "dac_out" "hold" "ibias" "oncomp" "raz"
hspiceD	_out" "conv" "dac_out" "hold" "ibias" "oncomp" "raz"
hspiceS	_out" "conv" "dac_out" "hold" "ibias" "oncomp" "raz"
spectre	_out" "conv" "dac_out" "hold" "ibias" "oncomp" "raz"
spectreS	_out" "conv" "dac_out" "hold" "ibias" "oncomp" "raz"

Figure 2: Edit Component CDF