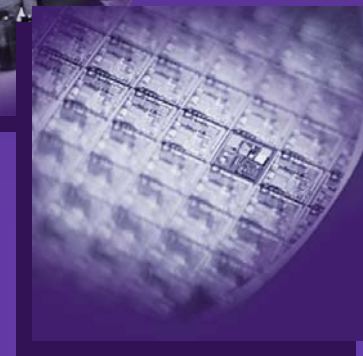


Synopsys Inputs on CMC Standard Model Code Requirements

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An example of code complexity

```
tmp_VB_S=(-(1.0e-100*(+(((-(vjlim_VB_S-  
vjsrh_VB_S)*IV(phitdinv))*(1.0+((0.5*(-2.3025850929940458e+02)-  
((vjlim-vjsrh)*IV(phitdinv))))*(1.0+(((2.3025850929940458e+02)-((vjlim-  
vjsrh)*IV(phitdinv))))*3.3333333333333333e-01)))))))+(((  
2.3025850929940458e+02)-((vjlim-vjsrh)*IV(phitdinv)))*(+(((0.5*(-  
vjlim_VB_S-vjsrh_VB_S)*IV(phitdinv))*(1.0+(((  
2.3025850929940458e+02)-((vjlim-  
vjsrh)*IV(phitdinv))))*3.3333333333333333e-01))))+((0.5*(-  
2.3025850929940458e+02)-((vjlim-vjsrh)*IV(phitdinv))))*(+(-  
vjlim_VB_S-vjsrh_VB_S)*IV(phitdinv))*3.3333333333333333e-  
01)))))))/((1.0+(((2.3025850929940458e+02)-((vjlim-  
vjsrh)*IV(phitdinv))*(1.0+((0.5*(-2.3025850929940458e+02)-((vjlim-  
vjsrh)*IV(phitdinv))))*(1.0+(((2.3025850929940458e+02)-((vjlim-  
vjsrh)*IV(phitdinv))))*3.3333333333333333e-01)))))))*(1.0+(((  
2.3025850929940458e+02)-((vjlim-vjsrh)*IV(phitdinv)))*(1.0+((0.5*(-  
2.3025850929940458e+02)-((vjlim-vjsrh)*IV(phitdinv))))*(1.0+(((  
2.3025850929940458e+02)-((vjlim-  
vjsrh)*IV(phitdinv))))*3.3333333333333333e-01))))))));
```

What is needed

- **Hand-written C with complete derivatives**
- **Coded, verified, and released in the SPICE3 modeling API**
- **Extensive reference results to cover**
 - **OP, DC, transient, AC, and noise simulations**
 - **Various bias and temperature sweeps**
 - **Wide ranges of geometries**
- **Consistent between release documents and source code**
 - **Model version control**
 - **Equations, parameter names and their numerical ranges, warning/error message conditions**
- **Released in a public web site with equal access by all to the same single standard.**

What is not preferred

- Releases of mainstream, standard models in Verilog-A, auto-generated C, or other solvers or kits; real or potential technical barriers for:
 - Quickly delivering consistent and accurate implementations by both commercial and in-house simulator providers
 - Achieving fast and robust simulation performance
 - Performing efficient QA and debugging by various modeling teams
 - Quick adoption by fabs and design houses
- A particular problem associated with auto-generated code
 - Additional efforts to update and maintain new versions inside a simulator