DOLPHIN DESIGN

SLED 3.4 & SMASH 7.4

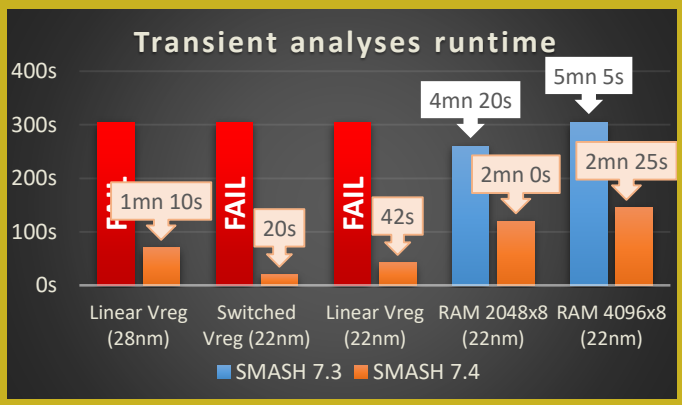
SPEED-UP Transient Analysis

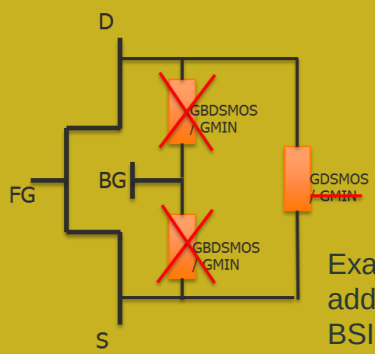
The acceleration of transient analyses is crucial because advanced process-nodes use many more small resistors than in the past, especially since simulations with post-extraction RC have become essential.

Thus, with SMASH 7.4, for circuits with thousands of MOS devices, designer productivity has been enhanced by improving and accelerating transient analysis by a factor x2 and more without losing simulations accuracy.

This has been done by deleting very small unessential resistors or capacitors thank to new setting of the option directive:

```
.OPTION RM_RMIN=<value> RM_CMIN=<value>
```





Example of conductor added in parallel with BSIM-IMG MOS model

SPEED-UP Loading Time

SMASH 7.4 speed-up loading time of analog circuits in advanced process-node up to x1.3 by optimizing evaluation of:

- parameters inside sub-circuits using .IF statement
- ERC (Electrical Rules Check)

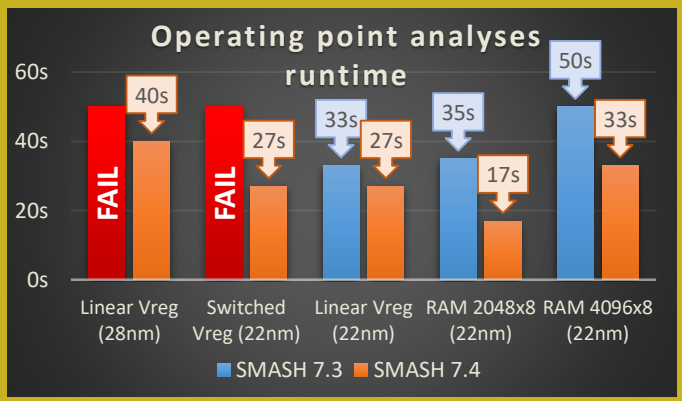
TMI Support Update

SMASH 7.4 Improves support of TMI (TSMC Model Interface):

- Update BSIM-BULK v106.2 with last TMI noise equations
- Integrate TMI noise equations for BSIM-CMG v106.1

Improve Operating Point Analyses

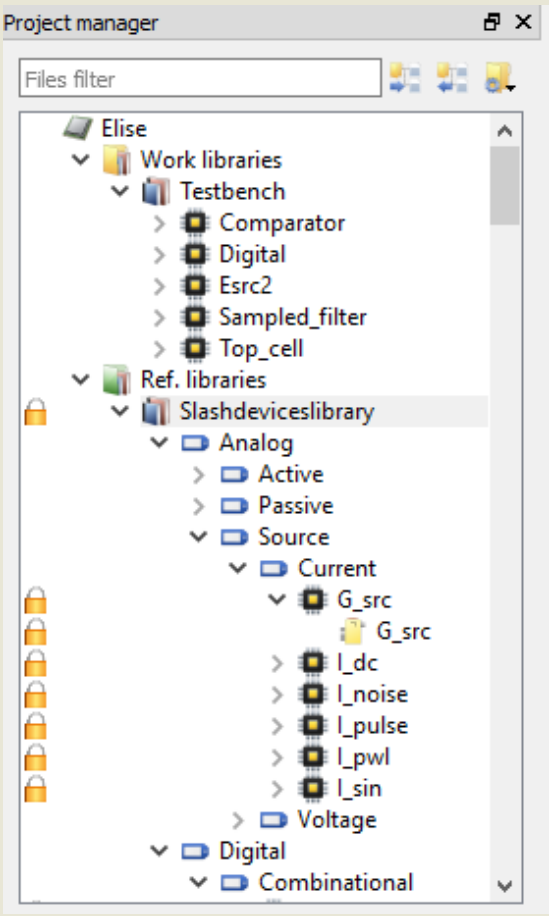
To improve convergence of operating point analyses and to improve simulation accuracy, SMASH 7.4 has updated small added conductors on MOS transistors of each advanced process-node (28nm, 22nm or 16mn).



SLED 3.4 & SMASH 7.4

Lock Library

SLED 3.4 provides the new feature of lock/unlock a library. When a library is locked (marked with a padlock), no change can be done through SLED graphic interface on any cells or views of the library.



Hierarchical Tags

SLED 3.4 enhances the cell display organization in libraries by providing the availability to use hierarchical tags.

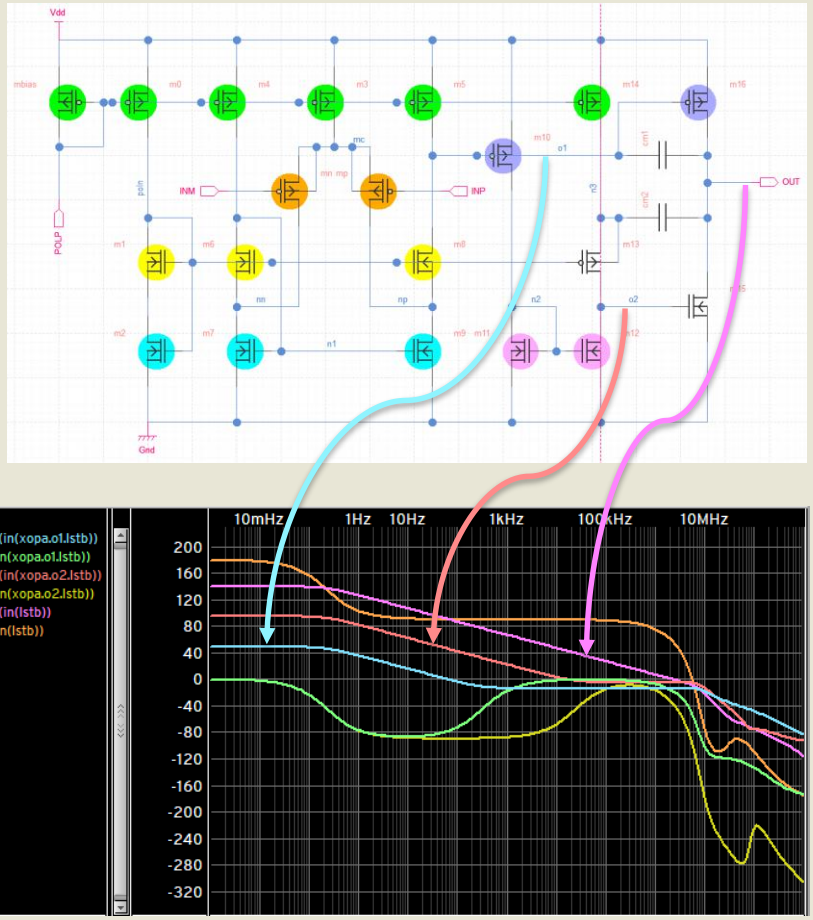
For instance, by defining the tags with hierarchical identifiers, this enables to display the cells as a tree structure.

New Loop Stability Analysis Method

Middlebrook and Tian methods are very useful for checking the stability of closed loop systems, or for doing the characterization of such systems.

But in case of instability, these methods cannot really help to diagnose and determine where the problem comes from.

To overcome this limitation, SMASH 7.4 provides the Zeq method that enables to draw the voltage of any node of the system in open loop from a closed loop system.



YOUR FEEDBACK MATTERS

To contribute suggestions and requests for the Dolphin EDA Solutions, please provide feedback on your user experience to **support@dolphin.fr**.