The Electrical Design-Manufacturing Interface
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Abstract:
DFM has been the major topic of discussion, research as well as investment in the semiconductor industry in the recent years. I will talk about the design-manufacturing interface (DMI) but purely from an electrical impact perspective. The DMI has two sides to it: design-aware manufacturing (DAM) and manufacturing-aware design (MAD) both of which are equally important. An example of DAM is gate-length biasing which significantly improves leakage power and hence power-limited yield. An example on the MAD side is process-aware timing optimization. In our experience, lithography effects are big enough at 45nm to warrant attention in electrical modeling and analyses. I will conclude with major challenges faced by tools which work at the DMI.

Bio: Dr. Puneet Gupta is currently an Assistant Professor in the department of Electrical Engineering at UCLA. He is also the co-founder and product-architect of Blaze DFM. He obtained his B.Tech in EE from Indian Institute of Technology, Delhi and Ph.D. from UCSD in 2007. He was a recipient of IBM Ph.D. fellowship and the EDAA outstanding dissertation award. He has published over 40 papers and holds two patents in the general area of the design-manufacturing interface. He has also been a tutorial presenter at ICCAD, SPIE Advanced Lithography Symposium, WesCon and CMP-MIC.