Matrix Computations & Scientific Computing Seminar

Organizer(s): James Demmel & Ming Gu

Wednesday, 11:00am–12:00pm, 380 Soda

Feb. 24 **Dr. Zhenhai Zhu**, Research Scientist, Cadence Research Labs

A Parameterized Mask Model for Lithography Simulation

We formulate the mask modeling as a parametric model order reduction problem based on the finite element discretization of the Helmholtz equation. By using a new parametric mesh and a machine learning technique called Kernel Method, we convert the nonlinearly parameterized FEM matrices into affine forms. This allows the application of a well-understood parametric reduction technique to generate compact mask model. Since this model is based on the first principle, it naturally includes diffraction and couplings, important effects that are poorly handled by the existing heuristic mask models. Further more, the new mask model offers the capability to make a smooth trade-off between accuracy and speed.