1171-65-68   **Marcus Sarkis*** (`msarkis@wpi.edu`) and **Alexandre L Madureira** (`alm@lncc.br`). *Robust Model Reductions for the Transmission Problem with High-Contrast Heterogeneous Coefficients.* Preliminary report.

The goal of this talk is to present finite element discretizations for second-order elliptic problems with heterogeneous and possibly with high-contrast coefficients. Based on a class of adaptive domain decomposition preconditioners named Balancing Domain Decomposition with Constraints–BDDC, Variational Multiscale Methods–VMS and Localized Orthogonal Decomposition Methods–LOD, we design robust discretizations and establish optimal a priori error energy estimates assuming only H1 regularity of the solution. (Received August 07, 2021)