1125-35-3156 **Yuliya Gorb*** (gorb@math.uh.edu), University of Southern California. *A Robust Preconditioner for High-Contrast Problems.*

This talk concerns robust numerical treatment of an elliptic PDE with high contrast coefficients. A finite-element discretization of such an equation yields the linear system whose conditioning worsens as the variations in the values of PDE coefficients becomes large. A saddle point description with a semi-positive definite matrix of the corresponding discrete problem is introduced and a robust preconditioner for the Lancsoz method of minimized iterations used for its solution is proposed. Numerical examples demonstrate effectiveness and robustness of the proposed class of preconditioners that yield the number of iterations independent of the contrast. (Received September 23, 2016)