

1116-35-2414 **Yuliya Gorb*** (gorb@math.uh.edu), Department of Mathematics, University of Houston,
Houston, TX 77204-3008. *Discrete Approximations for High Contrast Heterogeneous Media
Problems.*

Many natural and man-made materials exhibit vast spatial variability in most of their properties. Mathematically this means that the processes in such heterogeneous media are described by partial differential equations with highly oscillating coefficients that take extremely large and/or very small values in the domain. This talk presents efficient discrete approximation tools that allow to accurately capturing the overall behavior of the considered system. The key issue of relationship between a continuum problem and the corresponding discrete approximation is also investigated. Various applications are discussed. (Received September 22, 2015)