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Yuliya Gorb* (gorb@math.uh.edu), University of Houston. *Asymptotic Analysis for High Contrast Problems*

The motivation behind the studies described in this talk is driven by the applications in which processes occur in media that contain multiple scales and whose constituents have vastly different mechanical properties. Such media are referred to as high contrast composites interest in which within the mathematical community has greatly grown in recent years. A mathematical formulation of the corresponding problem is given by PDEs whose coefficients have high variations in their values within the given domain. A few asymptotic techniques will be presented that are developed by taking into account details of the complex geometry of the domain. Both scalar and vectorial formulations will be explored. (Received October 03, 2016)