Analysis of Multiscale Methods

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The heterogeneous multiscale method gives a general framework for the analysis of multiscale methods. In this talk, we demonstrate this by applying this framework to two canonical problems: The elliptic and parabolic problems with multiscale coefficients and the quasi-continuum method. This is a joint work with W. E (PACM, Princeton University) and P. Zhang (School of Mathematical Sciences, Peking University).