THE UNIVERSITY OF HONG KONG

Department of Mathematics

C O L L O Q U I U M

Multiscale Model Reduction for Heterogeneous Problems

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Abstract

Heterogeneous problems with high contrast, multiscale and possibly also random coefficients arise frequently in practice, e.g., reservoir simulation and material sciences. However, due to the disparity of scales, their efficient and accurate simulation is notorious challenging. First, I will describe some important applications, and review several state-of-the-art multiscale model reduction algorithms, especially the Generalized Multiscale Finite Element Method (GMsFEM). Then I will describe recent efforts on developing a mathematical theory for GMsFEM, and ongoing works on algorithmic developments and novel applications.

References

[1] Guanglian Li, *submitted to Multiscale Modeling & Simulation*, 2018.

Date: **January 10, 2019 (Thursday)**

Time: **9:30 – 10:30am**

Venue: **Room 210, Run Run Shaw Bldg., HKU**

All are welcome