

In this talk, we will discuss periodic homogenization problems of the form                      subject to a

homogeneous Dirichlet boundary condition. We derive                      corrector estimates and propose, and rigorously analyze, a numerical scheme based on finite element approximations for such problems. If time allows, we extend the results to the case of nonuniformly oscillating coefficients.

This is joint work with Yves Capdeboscq (Université de Paris, CNRS, Sorbonne Université, LJLL) and Endre Süli (University of Oxford).