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Zhongwei Shen* (zshen2@email.uky.edu), Department of Mathematics, University of Kentucky, Lexington, KY 40506. *Homogenization of Neumann Boundary Value Problems*. Preliminary report.

In this talk I will discuss my recent joint work with Carlos Kenig and Fanghua Lin on uniform estimates for a family of second order elliptic systems with rapidly oscillating periodic coefficients. We consider the Neumann problem in $C^{1,\alpha}$ domains and establish the uniform boundary Lipschitz estimates. As a consequence we are able to solve the L^p Neumann problem for all $1 < p < \infty$ with uniform non-tangential maximal function estimates. (Received September 08, 2010)