1075-65-231 **Elena Cherkaev*** (elena@math.utah.edu). *Matrix Pade approximants of the spectral function of composites.*

The talk discusses reconstruction of the spectral measure in the Stieltjes integral representation of the effective properties of composite materials using Pade approximation. We consider a case of matrix valued measure corresponding to anisotropic composites. Matrix Pade approximants are derived using matrix polynomials orthogonal with respect to the spectral function. We discuss applications to inverse homogenization theory and to numerical simulation of propagation of waves in composites. (Received August 30, 2011)