Seminar im Rahmen des GRK 2078

Referee:	**Prof. Reinaldo Rodríguez-Ramos** Faculty of Mathematics and Computer Science, University of Havana, Cuba
Date:	Tuesday, December 17, 2019
Time:	14:00 h
Location:	Bldg. 10.23, 3rd Floor, Room 308.1 (KM-Seminar Room)
Title:	**Maxwell method applied to piezoelectric heterogeneous problems**

Abstract

The effective electro-elastic properties of piezoelectric composites are computed using the Maxwell homogenization method (MHM). The composites are made by several families of spheroidal inhomogeneities embedded in a homogeneous infinite medium (matrix). Each family of spheroidal is made of the same material, and all the inhomogeneities have identical size and shape and are randomly oriented.

The heterogeneities and matrix materials exhibit piezoelectric transversely isotropic symmetry. It is shown that the shape of the "effective inclusion" substantially affects the effective piezoelectric properties. A new and simple form to calculate the aspect ratio of effective inclusion is presented. The effect on the overall piezoelectric properties due to the orientation of the heterogeneities and different families of piezoelectric inhomogeneities is discussed. The MHM approach is applied in two examples, material with heterogeneities having scatter orientation and composites with two different families of spheroidal inclusions.

Alle Interessenten sind herzlich eingeladen.

Prof. Dr.-Ing. Thomas Böhlke
(Sprecher des GRK 2078)