数学与系统科学研究院

计算数学所学术报告

报告人： **Prof. Bernadette Miara**

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报告题目：

ELASTODYNAMICS OF STRONGLY HETEROGENEOUS PERIODIC PLATES USING REISSNER-MINDLIN AND KIRCHHOFF-LOVE MODELS

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报告时间：2015 年 6 月 3 日（周三）

下午 **15:30~16:30**

报告地点： 科技综合楼三层

311 报告厅

Abstract：

The lecture deals with the homogenization of strongly heterogeneous elastic plates satisfying the Reissner-Mindlin or the Kirchhoff-Love hypotheses.We rigorously justify the limit models obtained by the asymptotic analysis which describe the harmonic waves propagation associated with in-plane displacement and transversal deflection modes in these two classical plate structures. Large contrasts in the coefficients of the elastic material components may result in existence of band gaps for the limit Reissner-Mindlin plates while an analogous property is lost for the deflection of the Kirchhoff-Love model. The different dispersion properties of both the limit plates are related to the changing sign of the limit frequency dependent mass density coefficients. The theoretical results are illustrated with some numerical simulations.

This is a joint work with Dr Eduard Rohan, Pilsen University, Czech Republic.

References

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E. ROHAN, B. M. (2014), "Elastic waves in strongly heterogeneous periodic plates of the Reissner-Mindlin and Kirchhoff-Love types". ZAMM (Z. Angew. Math. Mech.) 1–23 / DOI 10.1002/zamm.201400145.

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