



## PIMS / AMI Seminar



Department of Mathematical & Statistical Sciences

# COLLOQUIUM

**"Elastodynamics of Strongly Heterogeneous  
Periodic Plates using Reissner-Mindlin and  
Kirchhoff-Love Models"**

**Dr. Bernadette Miara**  
Université Paris-Est

**Thursday October 15, 2015**  
**3:30 p.m. in CAB 657**

**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.

***For those attending the Colloquium,  
a reception will be held at 4:30 pm in CAB 649.***