UNIVERSITY OF LIVERPOOL

Department of Mathematical Sciences

RESEARCH CENTRE IN MATHEMATICS & MODELLING

ELASTICITY DAY

One-Day Workshop on Mathematical Modelling in Solid Mechanics

organised by Liverpool University, LJMU and sponsored by RCMM

Saturday, 5th May 2012

Room 027, Proudman Lecture Theatre, Mathematical Sciences Building, University of Liverpool

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10:30 – 11:00 Coffee and Welcome

11:00 – 11:35 R. Craster (Imperial College, London) *"Buoyancy driven fracture"*
11:35– 12:10 J.R. Willis (University of Cambridge) *"Modelling of crack front perturbations"*
12:10 – 12:45 Y. Fu (University of Keele) *"Recent results on elastic localization"*
12:45 – 13:20 J. Kaplunov (Brunel University) *"Explicit models for surface waves and moving load problems"*

13:20 – 14:00 L u n c h and D i s c u s s i o n

14:00 – 14:20 L. Joseph (Imperial College, London) *"Asymptotics for waves guided along line defects in lattices"*
14:20 – 14:40 I. Argatov (Aberystwyth University) *"Asymptotic modelling of articular contact: sensitivity analysis"*
14:40 – 15:00 M. Makwana (Imperial College, London) *"High frequency homogenization for point defects"*
15:00 – 15:20 Y. Zhu (University of Glasgow) *"Nonlinear buckling of three-dimensional thick-walled elastic tubes under pressure"*
15:20 – 15:40 A. Piccolroaz (Trento/Aberystwyth University) *"Steady-state crack propagation in couple stress elastic materials"*

15:20 - 16:10 Tea / Coffee

16:10 - 16:30 T. Shearer (University of Manchester) *"Antiplane wave scattering from a cylindrical void in a pre-stressed nonlinear elastic material"*
16:30 – 16:50 A. Pichugin (Brunel University) *"Thermoelasticity in quasi-adiabatic approximation"*
16:50 – 17:10 M. Cherdantsev (Cardiff University) *"Homogenization of nonlinear high-contrast periodic composites via two-scale Gamma-convergence"*
17:10 – 17:30 L. Morini (University of Modena and Reggio Emilia) *"Stroh Formalism in analysis of symmetric and skew-symmetric weight functions for interfacial cracks in anisotropic bimaterials"*
17:30 – 17:50 R. de Pascalis (University of Manchester) *"Predicting the pressure-volume curve of an elastic microsphere composite"*
17:50 – 18:10 M. Nieves (Liverpool John Moores University) *"Modelling of an advancing fault in an elastic lattice"*