



General Mathematics Seminar (GMS)

of the University of Luxembourg

in cooperation with the Luxembourg Mathematical Society

Tuesday 6th of March 2018, 4 pm
Maison du Nombre, MNO 1.020

Dr. Luigi Vergori (University of Perugia, Italy)

Dr. Luigi Vergori is Lecturer of Mathematics at University of Perugia. He works on Stability of harmonic maps; Linear and nonlinear stability in implicit theories of fluid dynamics; Piezo-viscous fluids; Mechanics of nematic shells; Nonlinear elasticity and Nonlinear waves. Having started his research career at Università del Salento, Luigi Vergori was awarded a Marie Curie Fellowship, which he did spend at National University of Ireland, Galway, co-funded by the Italian Institute of Higher Mathematics and the European Commission, and working on instability and anisotropy. He then became Lecturer of Mathematics at the University of Glasgow, where the Carnegie Trust selected him as PI for the project *Bending and unbending of a hyperelastic material*. Also, he won an AIMETA (Italian Association of Theoretical and Applied Mechanics) Junior prize for innovative contributions to the mathematical modelling of nematic liquid crystals coating curved surfaces.



Influence of the extrinsic curvature on the equilibrium of nematic films

Nematic films are thin fluid structures, ideally two-dimensional, endowed with an in-plane degenerate nematic order. In this talk I will examine a generalisation of the classical Plateau problem to an axisymmetric nematic film bounded by two coaxial parallel rings. At equilibrium the shape of the nematic film results from the competition between surface tension, which favours the minimization of the area, and the nematic elasticity which instead promotes the alignment of the molecules along a common direction. Two classes of stable equilibrium configurations will be presented to highlight the effects due to the boundary conditions and the extrinsic curvature tensor of the film itself.

Coffee and cookies: 15:40 on the 6th floor of the MNO, in the kitchen corner of maximal distance to the elevator.

Time and place of the talk: 16:00 (4 p.m.) in the Maison du Nombre, MNO 1.020.

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