Minimizers of a Landau-de Gennes Energy with a Subquadratic Elastic Energy

Bianca Stroffolini

I will present a modified Landau-de Gennes model for nematic liquid crystals, where the elastic term is assumed to be of subquadratic growth in the gradient. In fact, there is little experimental evidence to conjecture that the elastic energy density may be subquadratic near defects matched by a quadratic growth away from defects.

The analysis of the behaviour of global minimizers in two and three dimensional domains, subject to uniaxial boundary conditions, in the asymptotic regime, is performed using tools of the regularity theory for functionals with general growth.

The results presented in this talk have been obtained in collaboration with Giacomo Canevari (Verona) and Apala Majumdar (Bath).

B Stroffolini, Dipartimento di Ingegneria Elettrica e delle Tecnologie dell'Informazione, Via Claudio, 80125 - Napoli, ITALY

E-mail address: bstroffo@unina.it