CURSO DE MASTER/DOCTORADO

Prof. Antonio Segatti

(Università degli Studi di Pavia, ITA)

Will give a series of lectures (8 hours) entitled

Variational Models for Nematic Shells

in October-November, 2015

The first lecture will be Wednesday October 28, 2015,
from 11:00 to 13:00
in the room 420 of the Departamento de Matematicas

Abstract: This series of lectures report on an ongoing research project in collaboration with G. Canevari, M. Snarski and M. Veneroni, focused on *Nematic Shells*. These are the datum of a two dimensional compact surface (without boundary, for simplicity) coated with a thin film of nematic liquid crystal. I will introduce and discuss the analytic features of an elastic surface energy, recently introduced by G. Napoli and L.Vergori. A particular attention will be given to the relations between the functional setting and the topology of the surface and, possibly, of the boundary conditions. The basic theory based on the gradient flow of the energy for Nematic Shells of genus one will be discussed together with a number of other properties of the flow. When considering the particular case of the axisymmetric torus, some finer properties of the minimizers together with some numerical simulations will be presented.
The course will be accessible to Master/Phd students and to non-experts in the field.