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*On Saturn-ring defects in a nematic liquid crystal / Sur les défauts du type "anneau de Saturne" des cristaux liquides nématiques*

We consider energy minimizing configurations of a nematic liquid crystal, as described by the Landau-de Gennes model. We focus on an important model problem concerning a nematic surrounding a spherical colloid particle, with normal anchoring at the surface. For topological reasons, the nematic director must exhibit a defect (singularity), which may take the form of a point or line defect. We consider two physical regimes in which "Saturn-ring" configurations will be energetically favorable: the case of colloids of small radius, and the case of strong applied magnetic fields. This is joint work with S. Alama and X. Lamy.