

Shape sensitivity analysis for a liquid crystal model

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We shall discuss a shape sensitivity result, obtained in collaboration with Luis González (UACH) [?], for the equilibrium energy, in the Oseen-Frank model, of a nematic liquid crystal under normal anchoring conditions on the boundary. As an application we show that, for a nematic liquid crystal confined between two parallel cylindrical domains, the coaxial configuration is a critical state for the equilibrium energy, partially resolving a conjecture made by Alouges and Coleman (Mathematical Models and Methods in Applied Sciences 11(3):459–473, 2001).

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