

Linear splitting schemes for a nematic-isotropic model with anchoring effects¹

M. A. Rodríguez-Bellido

Depto. de Ecuaciones Diferenciales y Análisis Numérico and IMUS, Univ. Sevilla, Spain.

angeles@us.es

(in collaboration with F. Guillén-González (Univ. Sevilla, Spain) and G. Tierra (Temple University, USA))

Abstract

In this talk I will present a diffuse interface approach to represent mixtures composed of isotropic fluids and nematic liquid crystals where we take into account the viscous, mixing, nematic and anchoring effects and an arbitrary interpolation function can be considered to localize the nematic region. We derive new linear splitting schemes which allows us to split the computation of the three pairs of unknowns in three different steps. Finally, we present several numerical simulations to illustrate the dependence of the dynamics on the different types of anchoring effects that can be considered.

Keywords: linear scheme, unconditional stable splitting, multiphase-flows, anchoring effects.

References

- [1] F. Guillén-González, M. A. Rodríguez-Bellido, G. Tierra. *Linear unconditional energy-stable splitting schemes for a phase-field model for nematic-isotropic flows with anchoring effects*. Int. J. Numer. Meth. Engng (2016) DOI: 10.1002/nme.5221

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