
SOOKYUNG JOO, Old Dominion University

Polarization-modulated orthogonal smectic liquid crystals

We study the ferroelectric bistability of polarization-modulated orthogonal smectic liquid crystals which exhibits a bistable response to applied electric field. The opposite anchoring at the stripe boundaries and in-polarization form topological singularities. The free energy of the polarization with electric self-interaction term on one stripe reduces to the Ginzburg-Landau functional with boundary penalty term. We describe the boundary vortices of the reduced functional and obtain convergence results of minimizers. We also perform numerical simulations to illustrate the results of our analysis. This is a joint work with T. Giorgi and C. J. García-Cervera.