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Topological transition in a two-dimensional model of liquid crystal ANA ISABEL FARIÑAS-SANCHEZ, RICARDO PAREDES V, BERTRAND BERCHE — Simulations of nematic-isotropic transition of liquid crystals in two dimensions are performed using an O(2) vector model characterized by nonlinear nearest neighbor spin interaction governed by the fourth Legendre polynomial P_4. The system is studied through standard finite-size scaling and conformal rescaling of density profiles of correlation functions. A topological transition between a paramagnetic phase at high temperature and a critical phase at low temperature is observed. The low temperature limit is discussed in the spin wave approximation and confirms the numerical results.

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