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Effective Field Theory of Fractional Quantized Hall Nematics MICHAEL MULLIGAN, Massachusetts Institute of Technology, CHETAN NAYAK, University of California at Santa Barbara and Station Q, SHAMIT KACHRU, Stanford University — We present a Landau-Ginzburg theory for a fractional quantized Hall nematic state and the transition to it from an isotropic fractional quantum Hall state. This justifies Lifshitz-Chern-Simons theory – which is shown to be its dual – on a more microscopic basis and enables us to compute a ground state wave function in the symmetry-broken phase. In such a state of matter, the Hall resistance remains quantized while the longitudinal DC resistivity due to thermally-excited quasiparticles is anisotropic. We interpret recent experiments by Xia et al. (cond-mat/1109.3219) at Landau level filling factor $\nu = 7/3$ in terms of our theory.

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