

Abstract Submitted  
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**Colloids at a Chiral Liquid Crystal-Isotropic Liquid Interface** ANNE PAWSEY, JUHO LINTUVUORI, TIFFANY WOOD, JOB THIJSEN, DAVIDE MARENDUZZO, PAUL CLEGG, University of Edinburgh — Whilst the behavior of particles trapped at liquid-liquid interfaces is relatively well understood the behavior as one of the phases begins to break translational symmetry is almost completely unexplored. Here the particles seed defects in the partially ordered liquid and new, effective, particle-particle interactions are induced. We use a chiral (cholesteric) liquid crystal which has a characteristic length scale, the pitch length, similar to the particle size. Our system consists of particles with planar anchoring which are trapped at an interface between the liquid crystal and an isotropic liquid (silicone oil which induces homeotropic anchoring). The creation of the cholesteric “fingerprint” texture allows the deformation of the cholesteric around a particle to be easily visualized. This allows us to determine the nature of the defects created and their symmetries. We have clear trends for the distribution of particles with respect to the interface as a function of particle size. Inspired by computer simulations we study the position of small particles (diameter  $<$  pitch length) within the fingerprint texture. The behavior of the unadorned interface between the chiral liquid crystal and the oil is also explored.

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