

Abstract Submitted  
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**Defect interactions in anisotropic two-dimensional fluids<sup>1</sup>** RALF STANNARIUS, KIRSTEN HARTH, Otto-von-Guericke-Universitt, Magdeburg — Disclinations in liquid crystals bear striking analogies to defect structures in a wide variety of physical systems, they are excellent models to study fundamental properties of defect interactions. Freely suspended smectic C films behave like quasi 2D polar nematics. An experimental procedure is introduced to capture high-strength disclinations in localized spots. After they are released in a controlled way, the motion of the mutually repelling topological charges is studied. We demonstrate that the classical models, based on elastic one-constant approximation, fail to describe their dynamics correctly. In realistic liquid crystals, the models work only in ideal configurations. In general, additional director walls modify interactions substantially.

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