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Dynamics of Stable and Metastable Structures of Liquid Crystal and Lipid Systems at Interfaces LAWRENCE HONAKER, Liquid Crystal Institute, Kent State University, PIOTR POPOV, ELIZABETH MANN, Department of Physics, Kent State University, EDGAR KOOIJMAN, Department of Biological Sciences, Kent State University, ANTAL JAKLI, Liquid Crystal Institute, Kent State University — Due to the amphiphilic structure and character of liquid crystal molecules, they tend to align in a planar fashion at a boundary with water and homeotropically at a boundary with air. However, the introduction of heteromolecules with long aliphatic tails, such as phospholipids, into the system promotes homeotropic alignment, a conformational change which is easily visually observable. It can be expected that the presence of these lipids induces a uniformly homeotropic texture in the liquid crystalline system, but experimental observations show otherwise. Studies of the textures and features that arise in such systems are presented here with an emphasis on the study of the metastable hybrid textures that develop, their stability, the characteristics of their alignment, and factors that influence their presence.

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