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Curvature-induced transitions in two-dimensional nematics BADEL L. MBANGA, Department of Polymer Science and Engineering, University of Massachusetts, Amherst, Massachusetts 01003, USA, C.D. SANTANGELO, Department of Physics, University of Massachusetts, Amherst MA, 01003, G.M. GRASON, Department of Polymer Science and Engineering, University of Massachusetts, Amherst, Massachusetts 01003, USA — Anisotropic particles absorbed to a fluid interface are known to significantly alter the structure and mechanics of these surfaces, possibly even stabilizing surfaces of complex, bicontinuous topology, as in "bijels" formed from arrested spinodally- decomposing fluid mixtures. We study the intricate interplay between the morphology of these interfaces and the alignment of anisotropic elongated particles with nematic order. Here we present results from computer simulation of nematic order on hyperbolic surfaces using a model that accounts for the contribution of both the intrinsic and extrinsic curvatures to the energetics of topological defects defects.

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