Abstract Submitted
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Effect of curvature on equilibrium and non-equilibrium properties of a 2D smectic phase.[1] LEOPOLDO R. GOMEZ, Department of Physics- Universidad Nacional del Sur- Argentina, ENRIQUE M. VALLES, Plapiqui - Universidad Nacional del Sur- Argentina, DANIEL A. VEGA, Department of Physics- Universidad Nacional del Sur- Argentina — We study through the Otha-Kawasaki model for diblock copolymers equilibrium and non-equilibrium features of two dimensional smectic phases on curved sinusoidal substrates. At low curvatures defect free patters are found to be stable. In agreement with theoretical predictions of Vitelli and Nelson [], at high curvatures topological defects are observed in the ground state. In this regime positive (negative) disclinations are located in regions of positive (negative) curvature. The configurations formed by stripes aligned with the lines of longitude are found to be unstable, while the equilibrium state is formed by the stripes aligned with the parallels. General features of smectic phases on curved backgrounds are discussed by a Frank elastic free energy in the one constant approximation.

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Daniel A. Vega
Department of Physics- Universidad Nacional del Sur- Argentina

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