Abstract Submitted
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The power spectrum of thermal composition fluctuations in a lamellar mesophase AUGUST BOSSE, Polymers Division, NIST — We derive an analytic expression for the power spectrum of Gaussian thermal composition fluctuations in an ordered lamellar mesophase. We compare this expression to the power spectrum measured in stochastic simulations of a two-dimensional diblock copolymer melt based on the Leibler-Brazovskii Hamiltonian. The analytic expression fits the simulation data with zero adjustable fitting parameters over a relatively wide range of model parameters. This expression will facilitate line-edge roughness (LER) modeling in block copolymer directed self-assembly applications, and it can serve as a model component in a scattering-based LER metrology framework.

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