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Mean-field Description of Spinodal Growth of Surface Waves on Rupturing Films¹ YONG JIAN WANG, OPHELIA K.C. TSUI, Department of Physics and Institute of Nano Science and Technology, Hong Kong University of Science and Technology — We examine the extent to which the mean-field theory is applicable to the description of the experimentally observed growth of surface waves on a rupturing polystyrene film coated on an oxide-covered silicon that is known to be spinodal unstable. We find that good agreement between theory and experiment is obtainable if corrections due to non-linear effects and stochastic thermal fluctuations are considered.

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