

404a Wetting Kinetics of a Thin Film under Evaporation in Air: Pinning of the Contact Line

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The dynamics of a thin film as it flows out of a slot will be described. The driving forces are the Laplace pressure and the disjoining pressure. The liquid evaporates into air. The system is assumed to be isothermal, that is, the evaporation is mass transfer limited. It will be shown that the precursor film cannot form because of evaporation and a steady state is reached. The properties of toluene are used in the calculations and the presence of dissolved polymer in dilute quantities does not appear to have an effect.