

Abstract Submitted
for the DFD19 Meeting of
The American Physical Society

Contact-line Fluctuations and the Dynamics of Wetting. JOEL DE CONINCK, University of Mons — Using MD simulations, we have shown previously that the fluctuations about the mean position of the contact line may be interpreted in terms of an overdamped one dimensional Langevin harmonic oscillator of stiffness k and demonstrated a relationship between the variance of the fluctuations of the contact line, the time decay of the oscillations and the contact-line friction. Here, we extend this work to study the fluctuations when the contact lines are moving, yielding dynamic advancing and receding contact angles that differ from their equilibrium values. A steady dynamic state is achieved by moving the plates in opposite directions at constant velocities. Under these conditions, we obtain an identical Langevin expression to that found at equilibrium, but now with the harmonic term centered about the mean location of the *dynamic* contact line and a fluctuating capillary force arising from the fluctuations of the *dynamic* contact angle around its mean value. During the talk, we will show that the contact-line fluctuations are the same irrespective of whether the contact line is at equilibrium or moving and contain all the information necessary to predict the dynamics of wetting.

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Date submitted: 02 Aug 2019

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