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The short-time dynamics of partial wetting JAMES BIRD, SHREYAS MANDRE, HOWARD STONE, Harvard University, HARVARD UNIVERSITY TEAM — When a liquid drop contacts a wettable surface, the liquid spreads over the solid to minimize the total surface energy. For perfectly wetting systems, the first moments of spreading are inertially dominated. In this work, we demonstrate that even in the presence of a contact line, the initial wetting is dominated by inertia rather than viscosity. We find that the spreading radius follows a power-law scaling in time where the exponent depends on the equilibrium contact angle. We propose a model, consistent with the experimental results, in which the surface spreading is regulated by the generation of capillary waves.

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