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Laws of spreading: why Tanner, Hoffman, Voinov, Cox and de Gennes were wrong, generally speaking PIROUZ KAVEHPOUR, ALIREZA MOHAMMADKARIM, University of California, Los Angeles — For nearly 50 years, most of the researchers in the area of wetting and spreading have used a relationship between the dynamics contact angle and velocity, $\theta^3 - \theta_0^3 \sim U$, where θ is dynamics contact angle, θ_0 is the equilibrium contact angle and U is the velocity of the wetting line. Different forms of this relationship are known as Tanner's law, Hoffman-Voinov-Tanner law or Cox model, all of them are derived based on hydrodynamics assumptions. In this talk, we will discuss several common situations that this relationship is not valid and we propose a new way to look at spreading problem and its underlying physics. Our experimental result agrees with this interpretation of spreading dynamics.

Pirouz Kavehpour
University of California, Los Angeles

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