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How contact-line pinning affects the dynamics of colloidal particles at fluid interfaces¹

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Using digital holographic microscopy, a fast 3D imaging technique, we measure the motion of colloidal particles near a liquid interface. We find that micrometer-sized polymer particles take a surprisingly long time – weeks or even months – to relax to equilibrium. This behavior can be understood in terms of a dynamic wetting mechanism involving thermally-activated hopping of the contact line over surface defects. I will present results that probe the nature of the pinning sites and how they can affect the pathway to equilibrium.

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