

Abstract Submitted
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Drop retention force as a function of rested time RAFAEL TADMOR, AISHA LEH, KUMUD CHAURASIA, PRASHANT BAHADUR, LINDA DANG — The force, f , required to slide a drop past a surface is shown to be a growing function of the time, t , the drop waited resting on the surface prior to the commencement of sliding along it. In this first report on the “rest time” effect we demonstrate the existence of this phenomenon in different systems, which suggests that this phenomenon is general. We show that df/dt is never negative. The shorter the resting times, the higher df/dt is. As the resting time increases df/dt decreases towards zero (plateau) as t tends to infinity. We attribute this phenomenon to the corrugation of the surface by the drop due to the unsatisfied normal component of the Young equation.

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