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Strong dynamical effects during stick-slip adhesive peeling MARIE-JULIE DALBE, STEPHANE SANTUCCI, Laboratoire de Physique, Ecole Normale Superieure de Lyon, LOIC VANEL, Institut Lumiere Matiere, Universite de Lyon, PIERRE-PHILIPPE CORTET, Laboratoire FAST, CNRS, Univ. Paris Sud, France — We consider the classical problem of the stick-slip dynamics observed when peeling an adhesive tape at a constant velocity. From fast imaging recordings, we extract the dependencies of the stick and slip phases durations with the imposed peeling velocity and peeled ribbon length. Predictions of Maugis and Barquins [in Adhesion 12, edited by K.W. Allen, Elsevier ASP, London, 1988, pp. 205-222] based on a quasistatic assumption succeed to describe quantitatively our measurements of the stick phase duration. Such model however fails to predict the full stick-slip cycle duration, revealing strong dynamical effects during the slip phase.

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