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**The influence of the solid/liquid interface on the dewetting of ultra thin polymer films** MATTHIAS LESSEL, MISCHA KLOS, Experimental Physics, Saarland University, OLIVER BAEUMCHEN, Dept. of Physics & Astronomy, McMaster University, KARIN JACOBS, Experimental Physics, Saarland University — In recent years, many studies showed that a thin liquid film on a solid surface in air bears more complexity than expected from a simple three-layer-system: e.g. a highly mobile surface layer in case the liquid is an unentangled polystyrene (PS) melt (Yang et al., *Science* 2010; Seemann et al., *J. of Polym. Sci.* 2006) or the PS melt can slip over the solid substrate (Baeumchen et al., *PRL* 2009). Our study focuses on such phenomena and explores their influence on dewetting (speed, morphology, etc.). We use hydrophilic and -phobic Si wafer (either covered by a highly ordered silane layer or by a thin layer of an amorphous fluoropolymer, AF 1600). On each of the substrates, one expects for a certain set of parameters spinodal dewetting for the PS melt. Yet experimentally, a much higher hole density is observed for both types of hydrophobic wafers than is theoretically expected. Moreover, the two hydrophobic coatings induce different dewetting speeds: the PS melt dewets faster on the silane covered Si wafer. The difference is attributed to slip (silane) or to no slip (AF 1600) conditions at the PS/substrate interface, which is also observable in the type of liquid front profile, which in turn changes the dewetting morphology.

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