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**Interface Roughening Dynamics of Spreading Droplets** HAIM TAITELBAUM, AVRAHAM BE'ER, INBAL HECHT, AVIAD FRYDMAN, Department of Physics, Bar-Ilan University, Ramat-Gan 52900, Israel, YOSSI LEREAH, Faculty of Engineering, Tel-Aviv University, Tel-Aviv 69978, Israel —
We review our recent experimental data of interface roughening dynamics of spreading mercury droplets on thin films (silver or gold), obtained using optical microscopy and other techniques (AFM, SEM). We discuss the various results obtained for the roughness and growth exponents associated with the interface dynamics, and their universality classes. We analyze the temporal width fluctuations, obtained for single interfaces, and show that these fluctuations contain information on the lateral correlation length of these interfaces. We show how to extract this length from experimental data, and demonstrate the validity of this method in a wide range of growing interfaces (droplet spreading experiments as well as water imbibition on paper). References: 1. A. Be'er, Y. Lereah and H. Taitelbaum, Physica A, 285, 156 (2000). 2. A. Be'er, Y. Lereah, I. Hecht and H. Taitelbaum, Physica A, 302, 297 (2001). 3. A. Be'er, Y. Lereah, A. Frydman and H. Taitelbaum, Physica A, 314, 325 (2002). 4. A. Be'er and Y. Lereah, J. of Microscopy, 208, 148 (2002). 5. I. Hecht and H. Taitelbaum, Phys. Rev. E, 70, 046307 (2004). 6. A. Be'er, I. Hecht and H. Taitelbaum, Phys. Rev. E, 72, 031606 (2005). 7. I. Hecht, A. Be'er and H. Taitelbaum, Fluctuation and Noise Letters, 5, L319 (2005).

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