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Glassy dynamics of polymers in thin films and monomolecular layers MARTIN TRESS, EMMANUEL U. MAPESA, University of Leipzig, ANATOLI SERGHEI, Universite Lyon 1, FRIEDRICH KREMER, University of Leipzig — The glassy dynamics of nanometer thin polymer layers supported on a solid substrate was investigated by Broadband Dielectric Spectroscopy (BDS). The thickness was systematically reduced finally resulting in randomly distributed polymer coils. Highest priority was put on an appropriate sample preparation including an annealing procedure for sufficient long time at elevated temperatures in inert atmosphere to avoid effects due to remaining solvent and chemical degradation. Further, detailed checks of the surface topology by atomic force microscopy (AFM) were performed to verify stability of the samples during the whole measurement. The dynamics is compared to the bulk to trace changes due to the impact of the interface and to give a length scale for the interfacial interactions.

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