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Correlated defect dynamics in block copolymer melts[1] ROBERT MAGERLE, Technische Universitaet Chemnitz, LARISA TSARKOVA, ARMIN KNOLL, Universitaet Bayreuth — With in-situ scanning force microscopy we image the ordering of cylindrical microdomains in a thin film of a diblock copolymer melt. Tracking the evolution of individual defects reveals their annihilation pathways via interfacial undulations and formation of transient phases, such as spheres and lamella. Repetitive transitions between distinct defect configurations suggest a cooperative movement of chain clusters. The microdomain dynamics is correlated on a length scale of several domain spacings. Characteristic times of structural relaxations range from ∼1 to ∼100 min.

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