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Morphology of monolayer films on quasicrystalline surfaces from the phase field crystal model JOERG ROTTLER, BENEDIKT ZIEBARTH, MICHAEL GREENWOOD, University of British Columbia — We present a computational study of the morphology of adsorbed monolayers on quasicrystalline surfaces with five- and seven-fold symmetry. The Phase Field Crystal model is employed to first simulate the growth of the quasicrystal surfaces and a two-dimensional film is then coupled elastically to the substrate. We find several different pseudomorphic phases for different types of surfaces and monolayer/substrate interactions, and quantify them by computing local order parameters. In agreement with recent experiments using colloids in quasiperiodic light fields, we find that the formation of quasicrystalline order is greatly inhibited on the seven-fold surfaces.

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