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Experimental study of the compaction dynamics for 2D granular pile of spherical and cylindrical grains GEOFFROY LUMAY, NICOLAS VANDEWALLE, FRANCOIS LUDEWIG, University of Liege — We present an experimental study of the compaction dynamics for two-dimensional granular systems. The compaction of a pile of spherical grains and of a pile of cylindrical grains have been studied. Compaction dynamics is measured at three different scales : the macroscopic scale through the normalized packing fraction, the mesoscopic scale through the normalized fraction of ideally ordered domains in the system, and the microscopic scale through the grain mobility. Moreover, the ideally ordered domains are found to obey a growth process dominated by the displacement of domain boundaries. A global picture of compaction dynamics relevant at each scale is proposed.

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