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Scaling of Force Networks for Compressed Particulate Systems<sup>1</sup> LENKA KOVALCINOVA, New Jersey Institute of Technology, ARNAUD GOUL-LET, Rutgers University, LOU KONDIC, New Jersey Institute of Technology — We consider the distribution of cluster sizes in compressed particulate systems as a function of the force experienced by the particles. The considered systems differ by the distribution of particle sizes and by their frictional properties. To obtain good statistics we consider various systems sizes and large number of realizations. While for some of the considered systems we find consistent scaling exponents describing the behavior of the force clusters, we are also finding that this behavior is not universal. For example, monodisperse frictionless systems that crystallize under compression, show very different scaling properties compared to other systems, particularly as the systems approach jamming transition. The findings are confirmed by explicitly computing fractal dimension of the considered clusters.

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