Abstract Submitted for the DFD11 Meeting of The American Physical Society

Percolation theory applied to the force field in granular material¹ ARNAUD GOULLET, LOU KONDIC, New Jersey Institute of Technology — We analyze the structure of the force field in slowly compressed granular system by the means of discrete element simulations. Using the tools of percolation theory, we compute the quantities describing the force field and discuss their dependence on polydispersity and frictional properties of the granular particles. Then, we correlate the results to the ones obtained using topological approach based on Betti numbers which measure the number of clusters as a function of force thresholds.

¹Supported by NSF Grant No. DMS-0835611

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Date submitted: 04 Aug 2011

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