

Abstract Submitted
for the MAR09 Meeting of
The American Physical Society

Method for Detecting Position and Orientation of Convex Objects in 3D Scans ALEXANDER JAOSHVILI, PAUL CHAIKIN, NYU — We have developed an algorithm for detecting the center positions and orientations of mono-disperse objects which pack a container from the data collected in a 3 dimensional scan such as obtained by MRI. The algorithm is applied to a variety of geometrical convex shapes including, ellipsoids, cubes and tetrahedrons. From the positions and orientations we are able to reconstruct the number and type of inter-particle contacts and constraints and thus to test Maxwell's Isostatic conjecture in the case of "random close packing." We also obtain translational and orientational correlation functions.

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Date submitted: 09 Dec 2008

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