**Experiments on Random Packings of Tetrahedrons**[1] ALEXANDER
JAOSHVILI, PAUL CHAIKIN, New York University — We have performed experiments related to the random packing of tetrahedral. The main experiments are MRI scans of tetrahedral dice from which we determine their positions and orientations. We have done a direct analysis of the dice packing. The dice differ from mathematical tetrahedral in having slightly rounded vertices and edges. We have performed a best fit to each die to a perfect tetrahedral and then relaxed the packing to reduce the resulting overlaps. Analyzed data for the dice, the relaxed tetrahedra and simulations include the packing density, the orientational and spatial correlation functions, the average coordination number as well as the distribution of point to face, edge to edge and edge to face contacts. We also study the boundary effects from the walls and the distribution of constraints per particle. Our measurements indicate that random packed tetrahedral have a very small spatial or orientational correlation length. They are more random, that is with smaller and shorter range correlations than what has been found for spheres, or ellipsoids.

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