

TOWARD THE ANALYSIS OF THE STRUCTURE OF GRANULAR MATERIALS

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S u m m a r y

The structural ordering, which is observed in granular materials and some other soft-matter objects (e.g., dusty plasma) on the meso- and macroscales, has been studied using geometrical methods (Voronoi diagrams) and by analyzing the structural order parameters. The phase diagrams for the translational and orientational order parameters testify to the native anisotropic character of granular materials. The model of lattice gas entropy has been used to describe the vertical density distribution in granular materials in a gravitational field. The obtained theoretical results agree well with experimental data and reproduce them in the nearest vicinity of the states with maximum packing.