CORRELATION BETWEEN PARTICLE MOTION AND VORONOI-CELL-SHAPE FLUCTUATIONS DURING THE COMPACTION OF GRANULAR MATTER

PUBLICATION FACTS

JOURNAL
PHYSICAL REVIEW LETTERS

PUBLICATION DATE
2008

VOLUME/ISSUE
101 (25)

AUTHORS
Slotterback, Steven
Toiya, Masahiro
Goff, Leonard
Douglas, Jack F.
Losert, Wolfgang

ABSTRACT

We track particle motions in a granular material subjected to compaction using a laser scattering-based imaging method where compaction is achieved through thermal cycling. Particle displacements in this jammed fluid correlate strongly with rearrangements of the Voronoi cells defining the local environment about the particles, similar to previous observations of Rahman on cooled liquids. Our observations provide further evidence of commonalities between particle dynamics in granular matter close to jamming and supercooled liquids.

Web Of Science Times Cited	Journal Citation Indicator
67	2.38