

Abstract Submitted
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Effects of Nonaffinity on Jammed Materials¹ DANIEL VERNON,
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versity of Pennsylvania — If an amorphous solid such as a jammed particle system
is subjected to an external stress, the induced displacements of internal particles are
necessarily nonaffine. Using numerical minimization procedures, we investigate the
response to stress of a disordered packing of purely repulsive spheres. We calculate
the correlations of the nonaffine part of the displacements of individual particles
just above the jamming threshold (point J)². We find that these correlations are
consistent with those predicted by a continuum theory and verified numerically in
simple model random elastic systems³.

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²C.S. O'Hern, L.E. Sibert, A.J. Liu, and S.R. Nagel, Phys. Rev. E **68**, 011306 (2003)

³B. DiDonna and T.C. Lubensky, Phys.Rev. E (to be published)

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