

Abstract Submitted
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To be or not to be jammed SIMON DAGOIS-BOHY, Kamerling Ohnes Laboratory - Leiden University, BRIAN TIGHE, TU Delft - 3mE, JOHANNES SIMON, Kamerling Ohnes Laboratory - Leiden University, SILKE HENKES, Syracuse University, MARTIN VAN HECKE, Kamerling Ohnes Laboratory - Leiden University — When are packings of soft athermal spheres jammed? Any experimentally relevant definition must at least require a jammed packing to resist compression and shear. Numerical algorithms usually rely on a global compression monitored by a parameter (like pressure) that signals whether the packing is jammed or not. Here we show that compression is not sufficient to ensure properly jammed packings : some of those packings have positive pressures and bulk moduli, but negative shear moduli, and even for large systems, the number of these “bad apples” diverges as the jamming point is approached. We will discuss how to understand this situation and propose as a remedy the boundary relaxation, that is including the boundary shape parameters as variables in the equilibration process; finally we will compare the distribution of shear moduli obtained for both methods.

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