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Response of Jammed Ellipsoid Packings ZORANA ZERAVCIC, Lorentz Institute, Leiden University and James Franck Institute and Department of Physics, University of Chicago, ANDREA LIU, Department of Physics and Astronomy, University of Pennsylvania, SIDNEY NAGEL, James Franck Institute and Department of Physics, University of Chicago — We investigate the nature of the jamming transition for packings of spheroids by examining the elastic moduli as a function of the aspect ratio of the particles ε and the compression. Irrespective of the particle aspect ratio, both shear modulus G and bulk modulus B show the same scaling as a function of compression as is found for packings of spheres. Moreover, for any value of ε, G is proportional to the excess of the coordination number above that found at the jamming threshold; this recovers the result for frictionless spheres at $\varepsilon = 1$. Our results imply a new diverging length scale associated with the loss of rigidity of these spheroid packings. The critical behavior of ellipsoid packings is an extension of that found for spheres.

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