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**Quenched Disorder as a Fourth Axis to the Jamming Phase Diagram** CYNTHIA OLSON REICHHARDT, Los Alamos National Laboratory, EVAN GROOPMAN, ZOHAR NUSSINOV, Washington University - St. Louis, CHARLES REICHHARDT, Los Alamos National Laboratory — We propose that the general jamming phase diagram proposed by Liu and Nagel [Nature 396, 21, 1998] as a function of shear, density and temperature could also have a fourth axis which is the density of quenched disorder. This could represent jamming in porous media. Using numerical simulations we show that the density at which jamming occurs in a two-dimensional system of disordered disks decreases as the amount of quenched disorder in the sample increases. We argue that when the jamming correlation length is on the same length scale as the average distance between disorder sites, the system will jam.

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