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Three dimensional imaging of soft sphere packings under shear[1] JOSHUA DIJKSMAN, HU ZHENG, ROBERT BEHRINGER, Duke University — The (microscopic) flow of three dimensional disordered athermal granular packings remains poorly understood. However, experimentally studying flow and deformations in a three dimensional packing of grains is challenging due to the opacity of such packings. We use refractive index matched scanning with hydrogel spheres to image such flows. Hydrogel is soft and has low friction, which allows for the study of contact forces via contact deformations. We look at how force networks develop in sheared packings close to the onset of mechanical rigidity.

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