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How far is the Jamming point street-lamp illuminating the real world? OLIVIER DAUCHOT, ESPCI, UMR Gulliver CNRS, Paris, France, CORENTIN COULAIS, University of Leiden, Leiden, The Netherlands, ROBERT P. BEHRINGER, Department of Physics, Duke University, Durham, NC, USA, CEA SACLAY/SPEC/SPHYNX - DUKE UNIV. COLLABORATION, ESPCI - CEA SACLAY/SPEC/SPHYNX COLLABORATION — The jamming of soft spheres at zero temperature has been extensively studied both numerically and theoretically, thus defining a well defined location, where a street lamp has been lit up. However it has been shown [1] that even model experiments on colloids are rather far away from the scaling regime illuminated by this lamp. Is it that the J-point has little to say about real system? We investigate the statics and the dynamics of the contact network of an horizontally shaken bi-disperse packing of photoelastic discs, close to jamming, we observe a remarkable dynamics of the contact network. It exhibits strong dynamical heterogeneities, which are maximum at a packing fraction ϕ^*, distinct and smaller than the packing fraction $\phi^\dagger$, where the average number of contact per particle starts to increase. We demonstrate that the two cross-overs, one for the maximum dynamical heterogeneity, and the other for structural jamming, converge at point J in the zero mechanical excitation limit. Our grains are frictional and are far from thermal equilibrium. However we succeed in mapping these behaviors onto those observed for thermal soft spheres and demonstrate that some light of the J-point street-lamp reaches our granular universe. [1] Ikeda et al. arXiv.1209.2814(2012)

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