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Density Fluctuations in Vibrating Granular Monolayers GUSTAVO CASTILLO, NICOLAS MUJICA, PABLO GUTIERREZ, LORETO OYARTE, Universidad de Chile, SCOTT WAITUKAITIS, University of Chicago, RODRIGO SOTO, Universidad de Chile — This study aims to quantify density fluctuations in a fluidized quasi-two-dimensional granular system close to a solid-liquid-like transition. This transition is reached above an acceleration threshold and at sufficiently high density. The system is a shallow square cell built with two square ITO coated glass plates. The cell is filled with approximately 10000 spherical 1 mm stainless steel particles and the filling density is about 85%. Due to the dissipative nature of grain contacts, energy is injected in the system by vertical vibrations. To characterize the system we measure its Static Structure Factor as well as dynamical correlation functions.

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