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Fluctuations in an agitated granular fluid KIRI NICHOL, MARTIN VAN HECKE, Leiden University — Granular media can be fluidized by a flow that occurs far away. Intruders placed in such a 'stationary granular fluid' sink until they reach a depth given by a granular analogue of Archimedes law. Once they float at this depth, these intruders effectively probe the microscopic agitations in the material that cause the fluidization. The spectrum of these fluctuations is anomalous. We present its dependence on experimental parameters such as driving rate, floating depth and probe size, and discuss the possibility of applying a non-equilibrium Fluctuation Dissipation relation to this system.

Martin van Hecke
Leiden University

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