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Density of states in two-dimensional colloidal system KE CHEN, ZEXIN ZHANG, PETER YUNKER, ARJUN YODH, Department of Physics and Astronomy, University of Pennsylvania — The vibrational density of states (VDOS) of particles in a two-dimensional binary colloidal system was investigated using video microscopy. Our ultimate goal is to explore how the VDOS varies near the jamming transition [1]. Various distributions of NIPA particles, whose diameters can be tuned by small temperature variations, were loaded into parallel-plate microscope cells, and their motions tracked with video microscopy. This approach permits in-situ observation over a wide range of particle packing fractions, from colloidal fluids to colloidal glasses. A search for excess VDOS at low frequencies in colloidal glass is ongoing. 1. N. Xu, M. Wyart, A. J. Liu, and S. R. Nagel, Phys. Rev. Lett. 98, 175502 (2007) This work is supported by NSF DMR-080488, MRSEC DMR-0520020

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