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Probing Bogoliubov phonons in quasi-2D BECs LIN XIA, DAN LOBSER, ERIC CORNELL, JILA, NIST, University of Colorado (Boulder), Department of Physics at University of Colorado (Boulder) — Quasi-2D condensate slices are created by loading a 3D Bose-Einstein condensate into a 1D optical lattice. Using a microwave pumping scheme a single layer is isolated. Bogoliubov phonons are projected onto free particles by rapidly turning off interatomic interactions. A temporal focusing technique is used to probe the momentum distribution of the resulting cloud. We measure correlations between density fluctuations at k and -k in the images and compare with Bogoliubov theory. This work funded by ONR and NSF.

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