



Bess Fang

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Breathing mode of 1D Bose gases

We measure the position- and momentum- space breathing dynamics of trapped one-dimensional Bose gases. The profile in real space reveals sinusoidal width oscillations whose frequency varies continuously through the quasicondensate to ideal Bose gas crossover. A comparison with theoretical models taking into account the effect of finite temperature is provided. In momentum space, we report the first observation of a frequency doubling in the quasicondensate regime, corresponding to a self-reflection mechanism. The disappearance of this mechanism through the quasicondensation crossover is mapped out.

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