Abstract Submitted
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Singular sound in a trapped quantum gas driven by two phase-conjugated optical vortices ALEXEY OKULOV, Russian Academy of Sciences — The trapped atomic cloud irradiated by two counter-propagating $\delta\omega$ frequency detuned Laguerre-Gaussian optical vortices with opposite angular momenta $\pm\ell\hbar$ is considered.[1,2] When period of spatial modulation $\lambda/2$ and LG carrier frequency detuning $\delta\omega$ [3] are in resonance with dispersion curve $\epsilon(p)$ [4] the acoustical vortices carrying orbital angular momentum[5] are expected to occur.[6,7] The experimentally accessible range of λ and $\delta\omega$ [8] is analyzed from the point view of direct measurements of the excitation spectrum $\epsilon(p)$[9,10]

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