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Dynamics of a rotating, strongly interacting Fermi gas STEFAN RIEDL, EDMUNDO R. SANCHEZ GUAJARDO, CHRISTOPH KOHSTALL, ALEXANDER ALTMAYER, JOHANNES HECKER DENSCHLAG, RUDOLF GRIMM, University of Innsbruck — We report on experimental studies on the dynamics of a rotating, strongly interacting Fermi gas of ${}^6\text{Li}$ atoms confined in a harmonic trap. To detect the angular momentum of the gas we exploit the fact that the behavior of a collective quadrupole excitation depends on the rotation frequency of the gas. We measure the lifetime of the angular momentum for different temperatures and trap anisotropies. The measurements show the expected decrease of the lifetime with increasing trap anisotropy and are in very good agreement with recent theory.

Stefan Riedl

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