

Abstract Submitted
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Spin orbit coupling in a dilute gas Bose-Einstein condensate¹

CHRIS HAMNER, JIAJIA CHANG, PETER ENGELS, Washington State University — The recent implementation of Raman dressing in cold atom systems opens the door for novel investigations of quantum dynamics. It provides an intriguing new tool to dynamically change the dispersion relation with unprecedented tunability. In suitable parameter regimes this scheme also allows for the generation of 1D spin orbit coupling analogous to the spin orbit coupling in complex condensed matter systems. In our experiments we have implemented spin orbit coupling for a ^{87}Rb BEC and study its influence on hydrodynamics properties. We present results of recent and ongoing research.

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