

Abstract Submitted
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p-Wave Resonant Bose Gas: A Finite-Momentum Spinor Superfluid¹ SUNGSOO CHOI, LEO RADZIHOVSKY, University of Colorado at Boulder — We study a degenerate gas of two-species bosonic atoms interacting through a p -wave Feshbach resonance (as realized in, e.g., a ^{85}Rb - ^{87}Rb mixture). We show that this model exhibits a finite-momentum atomic-molecular superfluid (AMSF), sandwiched by a molecular p -wave (orbital spinor) superfluid and by an s -wave atomic superfluid at large negative and positive detunings, respectively. The magnetic field can be used to tune the modulation wave vector of the AMSF state, as well as to drive quantum phase transitions in this rich system.

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