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Modeling a sodium spinor condensate STEPHEN MAXWELL,
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sodium atoms shows coherent oscillations of the spin populations. These oscillations are well described by a theory based on the assumption that the three spin
projections of the condensate share a single spatial mode [1]. Some time after the
initial state preparation the oscillations damp and the system arrives in a state
consistent with the ground state predictions of this theory. The transition from coherent oscillations to a ground state, however, is not understood. In this poster we
describe a numerical model based on a three- component coupled Gross Pitaevskii
equation that simulates the behaviour of the gas. The model shows a coupling of
spin interactions to motional degrees of freedom and shows behaviour similar to that
seen in experiment. We also describe our efforts to produce an analytic model of
this system. [1] W. Zhang et al, Phys. Rev. A, 72, 013602 (2005)

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