

Abstract Submitted  
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**Collective excitations in a spinor condensate**<sup>1</sup> JIANING HAN,  
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confined in a trap allow us to study the excitation between eigenfunctions of a given  
trap potential, which can be directly calculated from quantum mechanics. Here we  
study the spinor collective excitations, in other words, the collective excitations of  
different spin components. Specifically, the spinor collective modes in a 3D har-  
monic trap will be presented. Moreover, different types of collective excitations in  
this trap, collective mode mixing as well as their applications will be discussed.

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