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**Coherent spinor dynamics in a spin-2 thermal gas** BING ZHU, XI-AODONG HE, JUN CHEN, XIAOKE LI, FUDONG WANG, MINGYANG GUO, DAJUN WANG, Department of Physics, The Chinese University of Hong Kong, BEC GROUP TEAM — Spinor dynamics has been explored extensively in spin-1 and spin-2 Bose Einstein condensates both theoretically and experimentally. However, few experiments have been done in normal spinor gases, especially spin-2 case. Here, we report an experimental study on coherent spin-population oscillations in an ultracold, thermal spin-2  $^{87}\text{Rb}$  gas. By tuning the magnetic field we observe a dynamics resonance corresponding to the maximum values of both the oscillation period and oscillation amplitude. We also identify the interaction dominated regime and the quadratic Zeeman dominated regime. A spin-2 kinetic theory is developed and its numerical solution shows reasonable agreement with our observation.

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