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Heteronuclear coherent spinor dynamics in an ultracold spin-1 mixture DAJUN WANG, XIAOKE LI, BING ZHU, FUDONG WANG, XIAODONG HE, JUN CHEN, MINGYANG GUO, Department of Physics, the Chinese University of Hong Kong — Ultracold spinor gas has been a subject of great interest in quantum gas research for many years. So far, however, all the experimental studies are carried out with a single atomic species, mostly either ^{23}Na or ^{87}Rb atom. Only very recently, it has been proposed theoretically that spinor dynamics can also exist in heteronuclear spin-1 mixtures. To explore this, we have prepared an optically trapped ultracold mixture of spin-1 ^{23}Na and ^{87}Rb atoms. With well controlled initial spin populations and magnetic fields, we have observed rapid spin population and magnetization oscillations for both Na and Rb due to heteronuclear spin-spin interactions. Following this first demonstration, we believe that rich heteronuclear spinor physics can be studied in the future. We are supported by RGC Hong Kong (grant nos. CUHK 403111 and CUHK 404712).

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