Title:	Rotating magnetocaloric effect in the ferromagnetic Weyl semi-metal Co3Sn2S2
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Abstract:	The rotating magnetocaloric effect is of recent interest in the magnetic refrigeration technique, in which the cooling effect is attained by rotating the anisotropic magnetocaloric material from one orientation to the other in a fixed magnetic field. In this work, we report the anisotropic magnetocaloric properties of single crystals of the ferromagnetic Weyl semimetal Co3Sn2S2 for magnetic field H along the c-axis (H‖c) and magnetic field H along the ab-plane (H‖ab). We observed a significant (factor of 2) difference between the magnetocaloric effect measured in both orientations. The rotating magnetocaloric effect has been extracted by taking the difference of the magnetic entropy change (ΔSM) for fields applied in the two crystallographic orientations. Scaling analysis of ΔSM, the rescaled ΔSM(T,H) vs reduced temperature θ curves collapse onto a single universal curve, indicates that the transition from paramagnetic to ferromagnetic phases at 174 K is a second-order magnetic phase transition. Furthermore, using the power law dependence of ΔSM and relative cooling power RCP, the critical exponents β and γ are calculated, which are consistent with the recent critical behavior study on polycrystalline samples of this compound [Yan et al., Solid State Commun. 281, 57 (2018)].
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