Anisotrophic Magnetocaloric Effect in Single Crystalline CoSb$_2$O$_6$[1] AARON B. CHRISTIAN, JOHN J. NEUMEIER, Montana State Univ., YI-KUO YU, National Center for Biotechnology Information — The quasi one-dimensional spin chains of CoSb$_2$O$_6$ are oriented along [110] at $z = 0$ and [1$\bar{1}$0] at $z = 1/2$. Application of magnetic field H parallel to [110] is therefore parallel to one set of chains and perpendicular to the other. $H > 2$ tesla, applied parallel to [110], lowers the Néel temperature ($T_N = 13.4$ K) for one set of chains, leaving the other set unaffected. This gives rise to two peaks in the heat capacity C_P, which are separated by 3.8 K when $H = 8$ tesla. Integrating $C_P(T, H)/T$ with respect to temperature yields a change in entropy ΔS_T, from which the change in *magnetic* entropy $\Delta S_m(\Delta H) = \Delta S_T(H_2) - \Delta S_T(H_1)$, is determined. Near 12 K we find that $\Delta S_m(8$ T$) = 2.97$ J/kg K for measurements with $H \parallel$ [110] or [1$\bar{1}$0] and $\Delta S_m(8$ T$) = 0.44$ J/kg K for $H \parallel$ [001]. This anisotropy implies that rotation of the sample in *constant* magnetic field could induce a change in sample temperature.

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