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## Anomalous Magnetic Excitations in $\text{PrOs}_4\text{Sb}_{12}$

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The low energy magnetic excitations in single crystals of the heavy-fermion superconductor  $\text{PrOs}_4\text{Sb}_{12}$  have been studied by inelastic neutron scattering (INS) at low temperatures. The present experiment revealed that magnetic excitations around 0.7 meV clearly soften at the zone boundary  $Q = (1,0,0)$  with a minimum energy of 0.45 meV, as shown in Fig. 1. This dispersive behavior agrees with the previous INS experiment [1]. By a better resolution, the low energy excitations were found to be split into two peaks even in zero magnetic field. Since the low energy excitations correspond to the crystal field transitions between the  $\Gamma_1$  singlet ground state and the  $\Gamma_4^{(2)}$  triplet first excited state, this result may indicate the splitting of the  $\Gamma_4^{(2)}$  triplet. Furthermore the previously observed quasielastic scattering at  $Q = (1,0,0)$  seems to be absent in the present study. The temperature dependence of the low energy excitations is also discussed.

[1] K. Kuwahara *et al.*: J. Phys. Soc. Jpn. **73** (2004) 1438.

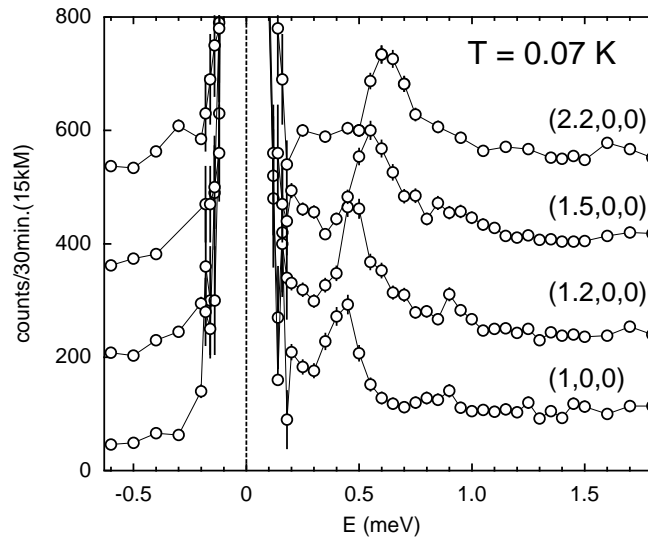


Figure 1: Energy spectra of excitations in  $\text{PrOs}_4\text{Sb}_{12}$  with several  $Q$  vectors at the lowest temperature of 0.07 K in zero magnetic field.