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Magnetic Structure and Crystal Field Potential of $PrOs_4As_{12}$[1]

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— Neutron powder diffraction and elastic neutron scattering have been used to determine the magnetic structure of the Filled Skutterudite compound $PrOs_4As_{12}$. The system becomes antiferromagnetically ordered with a Neel temperature (T_N) at 2.28K, which has A-type magnetic structure with spins lying along the doubled axis of the magnetic unit cell. The crystal field potential of $PrOs_4As_{12}$ has been studied by inelastic neutron scattering (INS). The ground state in the T_h point group symmetry is determined to be a Γ_5 triplet. This is confirmed by Zeeman effect exhibited at low temperatures under high magnetic fields.

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