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Magnetic properties of the layered structure $\text{Pr}_3\text{Os}_4\text{Al}_{12}$ compound

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We have investigated the physical and magnetic properties of the hexagonal Kagome lattice structure compound $\text{Pr}_3\text{Os}_4\text{Al}_{12}$ which crystallizes in the hexagonal $\text{Gd}_3\text{Ru}_4\text{Al}_{12}$ -type structure with space group $P63/mmc$ (No. 194). The compound shows a long-range magnetic ordering of the Pr^{3+} moment at $T_C = 37$ K as indicated by the temperature dependences of magnetic susceptibility, specific heat and electrical resistivity. The magnetic ordering is associated with the frustration of the magnetic spins which are located on a triangular Kagome lattice. The electrical resistivity shows a spin-gap behavior below T_C .

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