

Abstract Submitted
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Magnetic ordering in EuCo_2As_2 ¹ BALAZS SIPOS, ATHENA S. SEFAT, BRIAN C. SALES, OAK RIDGE NATIONAL LABORATORY, OAK RIDGE, TENNESSEE 37831, USA TEAM — We have synthesized and studied EuCo_2As_2 single crystals by resistivity, magnetoresistance, and susceptibility measurements. We found antiferromagnetic (AFM) ordering of the Eu spins at $T_N = 50$ K. Upon applying a magnetic field $H\parallel ab$ at $T = 2$ K this phase exhibits a metamagnetic (MM) transition at $H_{MM} = 3.5$ T. In case of $H\parallel c$ the magnetisation increases linearly up to 7 T. The same AFM to MM transition was found at 0.5 T in EuFe_2As_2 where it was found to be due to the reorientation of the Eu spin. We found that replacing Fe with Co strengthens the coupling between the Eu moments resulting in a higher T_N and H_{MM} .

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