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Anomalous magnetic enhancement by doping Mn in Co clusters SHUANGYE YIN, Georgia Institute of Technology, RAMIRO MORO, XIAOSHAN XU, WALTER DE HEER — Magnetic moments of $Co_N Mn_M$ and $Co_N V_M$ clusters (with Mn and V concentration less than 30%) are measured using Stern-Gerlach deflection method in molecular beams. Their average moments per atom as a function of impurity concentrations are studied and compared with bulk. Both $Co_N Mn_M$ and $Co_N V_M$ clusters have higher average moments than their bulk counterpart due to reduced sizes. The average moments for $Co_N Mn_M$ clusters are found to increase with Mn concentration, opposite to that of CoMn bulk. The enhancement effect is found to be independent of cluster size and composition. Meanwhile, $Co_N V_M$ clusters show reduction of average moments with V doping, consistent with what are expected in CoV bulk. The results are discussed within the virtual bound states model.

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