# The influece of the chemical disorder in the FeCo system on the magnetic properties - a combined ab initio and Monte Carlo study

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Having performed the self-consistent field calculations for the $Fe_{1-x}Co_x$ system. using the Korringa-Kohn-Rostoker method implemented in Munich (SPR-KRR) code, we obtained the exchange integrals from the resultant potential. We then used the obtained magnetic moments and exchange integrals to calculate, using the Uppsala atomistic spin dynamics (UppASD) code, the magnetization and susceptibility dependency on temperature for the whole range of concentrations. The UppASD code allows for Monte Carlo (MC). We treated the chemical disorder using the coherent potential approximation (CPA). The lattice constants were optimized using the FPLO code. The calculations were done using the GGA for both the SPR-KKR and FPLO codes. The authors acknowledge the financial support from the Foundation of Polish Science grant HOMING. The HOMING programme is co-financed by the European Union under the European Regional Development Fund.