

Abstract submitted to the  
NATO ADVANCED RESEARCH WORKSHOP  
New materials for thermoelectric applications: theory and experiment  
September 19 - 25, 2011 Hvar, Croatia

## Doping dependence of the Nernst effect in $\text{Eu}(\text{Fe}_{1-x}\text{Co}_x)_2\text{As}_2$ - departure from Dirac fermions physics<sup>1</sup>

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Submitted : 09-09-2011

Keywords : Iron pnictides, Nernst effect, Dirac fermions

We report a systematic study of the transport properties in the series of  $\text{Eu}(\text{Fe}_{1-x}\text{Co}_x)_2\text{As}_2$  single crystals with  $x = 0, 0.15, 0.20$  and  $0.30$ . Spin-density-wave (SDW) order is observed in the undoped and the least doped samples with  $x = 0$  and  $0.15$  at  $T_{SDW} = 191$  and  $131$  K, respectively. For  $x = 0.15$  and  $0.20$   $\text{Eu}(\text{Fe}_{1-x}\text{Co}_x)_2\text{As}_2$  becomes a superconductor with  $T_c^{onset} = 20.5$  and  $8.5$  K, respectively. We find properties of the SDW state in the parent  $\text{EuFe}_2\text{As}_2$  compound well described by the Dirac fermions model. On the other hand, the small cobalt doping significantly changes the transport coefficients below  $T_{SDW}$  in  $\text{Eu}(\text{Fe}_{0.85}\text{Co}_{0.15})_2\text{As}_2$ . Further increasing of  $x$  causes an evolution of the system toward a regular metallic state. The antiferromagnetic ordering of the  $\text{Eu}^{2+}$  ions at  $T_N \approx 18$  K has only minor influence on the measured quantities.

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<sup>1</sup>This work was supported by Grant No. N N202 130739 of the Polish Ministry of Science and Higher Education.