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**Interplay between magnetism and superconductivity in  
EuFe<sub>2-x</sub>Co<sub>x</sub>As<sub>2</sub> studied by <sup>57</sup>Fe and <sup>151</sup>Eu Mössbauer spectroscopy**

A. BŁACHOWSKI<sup>1</sup>, K. RUEBENBAUER<sup>1</sup>, J. ŻUKROWSKI<sup>2</sup>,  
Z. BUKOWSKI<sup>3,4</sup>, K. ROGACKI<sup>3</sup>, J. KARPINSKI<sup>4</sup>

<sup>1</sup>Mössbauer Spectroscopy Division, Institute of Physics, Pedagogical  
University, Cracow, Poland; sfblocho@cyf-kr.edu.pl

<sup>2</sup> Solid State Physics Department, Faculty of Physics and Applied Computer  
Science, AGH University of Science and Technology, Cracow, Poland

<sup>3</sup> Institute of Low Temperature and Structure Research,  
Polish Academy of Sciences, Wrocław, Poland

<sup>4</sup> Laboratory for Solid State Physics, ETH Zürich, Zürich, Switzerland

The compound EuFe<sub>2-x</sub>Co<sub>x</sub>As<sub>2</sub> was investigated by means of the <sup>57</sup>Fe and <sup>151</sup>Eu Mössbauer spectroscopy versus temperature (4.2-300K) for x=0 (parent), x=0.34-0.39 (superconductor) and x=0.58 (overdoped). It was found that spin density wave (SDW) is suppressed by Co-doping, however it survives in the region of superconductivity. Iron spectra exhibit some non-magnetic component in the superconducting region. Europium orders antiferromagnetically regardless of the Co-doping level with the spin reorientation from the a-axis in the parent compound toward c-axis with the increasing doping. The reorientation takes place close to the a-c plane. Some trivalent europium appears versus doping due to the chemical pressure induced by Co-dopant and it experiences some transferred magnetic hyperfine field from Eu<sup>2+</sup>. Iron experiences some transferred field due to the europium ordering for doped samples in the SDW and non-magnetic state both. Transferred field is undetectable in the parent compound. Superconductivity coexists with the 4f-europium magnetic order within the same volume. It seems that superconductivity has some filamentary character in EuFe<sub>2-x</sub>Co<sub>x</sub>As<sub>2</sub> and it is confined to the non-magnetic component seen by the iron Mössbauer spectroscopy.