On the magnetic tricritical point in BaFe$_{2(1-x)}$Co$_{2x}$As$_2$[1]

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We present here high resolution magnetization measurements on high-quality BaFe$_{2(1-x)}$Co$_{2x}$As$_2$, $0 \leq x \leq 0.046$ as-grown single crystals. The results confirm the existence of a magnetic tricritical point in the (x,T) plane at $x_{tr}^m \approx 0.022$ [1,2]. We show that the extrapolated T_c onset doping could be close to the magnetic tricritical point x_{tr}^m. It has been speculated that the magnetic critical point is relevant to the superconductivity in this series [3]. Finally, we comment on the universality of the tricritical point in the superconducting 122s.

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