

**Supplementary Information for "Probing transport mechanisms  
of BaFe<sub>2</sub>As<sub>2</sub> superconducting films and grain boundary junctions  
by noise spectroscopy"**

C. Barone<sup>1,2</sup> \* F. Romeo<sup>1,2</sup>, S. Pagano<sup>1,2</sup>, M. Adamo<sup>2</sup>,  
C. Nappi<sup>3</sup>, E. Sarnelli<sup>3</sup>, F. Kurth<sup>4</sup>, and K. Iida<sup>4</sup>

<sup>1</sup>*Dipartimento di Fisica "E.R. Caianiello",*

*Università di Salerno, I-84084 Fisciano, Salerno, Italy*

<sup>2</sup>*CNR-SPIN Salerno, Università di Salerno, I-84084 Fisciano, Salerno, Italy*

<sup>3</sup>*CNR-SPIN Napoli, Via Campi Flegrei 34, I-80078 Pozzuoli, Napoli, Italy*

<sup>4</sup>*Leibniz-Institut für Festkörper- und Werkstoffforschung (IFW) Dresden,*

*PO Box 270116, 01171 Dresden, Germany*

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\*Electronic address: cbarone@unisa.it

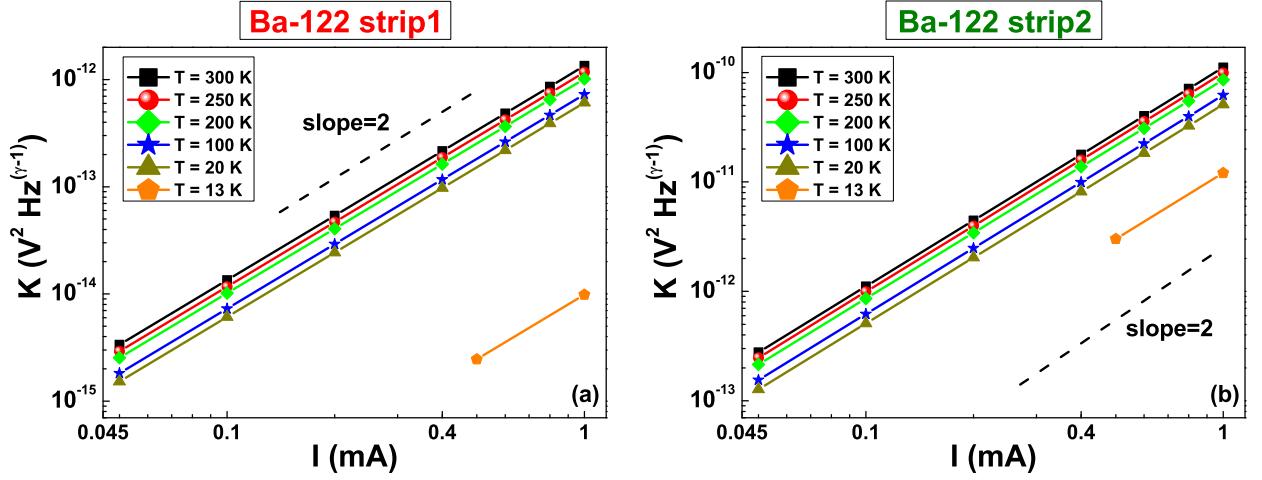


FIG. 1: Current dependence of the noise amplitude  $K$  in the temperature range 13 – 300 K. (a) The data refer to the strip1, which is without the grain boundary junction. (b) The data refer to the strip2, which contains the grain boundary junction. The dashed line with slope 2 in the log-log graph is a reference for the quadratic scaling.