Abstract Submitted
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Magnetic phenomena, ferro and antiferro Kondo, and transport in transition metal break junction nanocontacts[1] ERIO TOSATTI, SISSA/ICTP/Democritos, Trieste, Italy — Transport in transition metal break junctions is of particular interest in connection with magnetism, which may be present either in the leads, and/or in bridging magnetic impurities, or else which may emerge spontaneously at the nanocontact, as expected in pristine Pt or Pd.[1] The standard Landauer ballistic conductance across the locally magnetic atomic contact is modified by Kondo phenomena that are predicted using ab initio electronic structure as a starting point, and the numerical renormalization group as a tool. The case of a magnetic impurity in a nonmagnetic contact[2] is shown to illustrate the competition between antiferro and ferro Kondo screening[3] and its effects on conductance. *) Work in collaboration with A. Smogunov, A. Dal Corso, L. De Leo, P. Gentile, M. Fabrizio, P. Lucignano, and R. Mazzarello. [1] A. Delin, et al., Phys. Rev. Lett. 92, 057201 (2004); A. Smogunov et al., Phys. Rev. B78, 014423 (2008). [2] R. Mazzarello, P. Lucignano, A. Smogunov, M. Fabrizio, and E. Tosatti, in preparation [3] P. Gentile, L. De Leo, M. Fabrizio, and E. Tosatti, in preparation

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Erio Tosatti
SISSA/ICTP/Democritos, Trieste, Italy

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