

# SEMINAIRE MAGNETISME et SUPRACONDUCTIVITE

Orsay - Palaiseau - Saclay

CEA Orme des Merisiers-Saclay  
Ecole Polytechnique - Palaiseau

Laboratoire Léon Brillouin - Saclay  
LPS-Université Paris-Sud - Orsay

**Lundi 29 Juin 2009 à 14 Heures**  
**(Bât 510 - Orsay – Moyen Amphi)**

**Lara Benfatto**

*Centro Studi e Ricerche "Enrico Fermi" and Department of Physics  
University of Rome "La Sapienza"*

## **Emergence of new physics from interband pairing in pnictide superconductors**

One of the most prominent discoveries of the last year is the emergence of superconductivity in pnictide superconductors. The occurrence of superconductivity at the border of antiferromagnetism prompted from the very beginning the analogy with cuprate superconductors, and renewed the hope to find a common superconducting mechanism for the two classes of materials. However, despite such analogy the physics of pnictides reveals marked differences with respect to cuprates, due to the multiband structure. The differences become even more pronounced if one assumes, as many authors have suggested, that pairing has mainly an interband character, as due to exchange of spin fluctuations. Here I will review the work we did recently on multiband superconducting in pnictides, showing that a minimal model requires a four-band structure and a proper theoretical approach to the subtleties of the interband pairing. The results will be compared with recent experiments on ARPES, superfluid density and fluctuation conductivity.

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C.J. van der Beek - X  
P. Pfeuty - LLB, *coordonateur*  
H. Raffy - LPS, *coordonateur*  
F. Rullier Albenque - SPEC

01 69 33 40 90(kees.vanderbeek@polytechnique.fr)  
01 69 08 50 03 (pfeuty@llb.saclay.cea.fr)  
01 69 15 53 38 (raffy@lps.u-psud.fr)  
01 69 08 75 48 (Florence.Albenque-Rullier@cea.fr)