

# Lucia Bossoni

## Curriculum Vitae

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## Personal information

First name Lucia

Last name Bossoni

Place and date of birth Pavia (Italy), 14 February 1986

Nationality Italian

## Education

August 2010 **Guest at St. John's College, Cambridge (UK)**, Exchange program with Collegio Ghislieri.

July 2010 **Master degree in Condensed Matter Physics, University of Pavia (Italy)**, Subject: Spin Correlations in  $S=1/2$  frustrated magnets on a square lattice as probed by NMR and Muon Spin Rotation. Grade: 110 cum laude, Supervisor: Prof. Pietro Carretta.

Sept 2008 **Bachelor degree in Physics, University of Pavia (Italy)**, Subject: Physical Properties and advanced applications of the light emitting diode (LED). Grade: 110 cum laude, Supervisor: Prof. Giorgio Guizzetti.

2005 –2010 **Student at Collegio Ghislieri, Pavia.**

## Work experience

### Research Activity

Jan. 2010 – present **PhD Student at the University of Roma Tre - CNISM (Consorzio Nazionale Inter Universitario per le Scienze Fisiche della Materia - National Grant)**. Subject: Study of flux lines lattice motion in iron-based superconductors as probed by NMR, Muon Spin Rotation, Ac-susceptibility and SQUID Magnetometry techniques

### Teaching Activity

2012 – present **Tutor for the II year students of the Bachelor Degree in Physics, Circuit laboratory, University of Pavia (Prof. M. Corti).**

2012 – present **Exam committee member for the courses of Structure of Matter and - Advanced Structure of Matter, University of Pavia (Prof. P. Carretta).**

2011 **Math tutor for the Foundation Year project - Saudi Arabia, Faculty of Medicine at the University of Pavia (Classes held in English language).**

2011 **Co-tutoring activity for a bachelor degree thesis, University of Pavia.**

## Scientific Interests and Current Research Activity

- Magnetic frustration and Strongly correlated electronic systems;
- NMR investigations of the flux lines lattice in iron-based superconductors;
- NMR and  $\mu$ SR study of the slow-dynamics in the normal phase of iron-based superconductors;

- Ac-susceptibility investigations of the flux lines lattice dynamics in the iron-based superconductors;
- Vortices above  $T_c$ : Analysis of the Superconducting Fluctuations in Rhodium-doped  $BaFe_2As_2$  via SQUID magnetometry;
- Cantilever Magnetometry studies of type II superconductors.

## Technical Skills

### Experimental Techniques

- Spectrometers for Nuclear Magnetic Resonance (NMR);
- Muon Spin Resonance ( $\mu$ SR);
- SQUID (Superconducting Quantum Interference Device) for magnetic measurements;
- Ac-susceptometer;
- Superconducting magnets and electromagnets;
- Electronics and cryogenic apparatuses.

### Informatic Skills

- Data analysis software (Origin, Mathematica, Mathcad, Labview)
- Data Acquisitions and analysis software (NTNMR, MagRes, MPMS)
- Latex (Good);
- Office Tools (MS Words, Excels, PowerPoint) (Good);
- C, C++ language (Basic);

### Linguistic Skills and Certificates

Italian Mother Tongue  
 English Fluent  
 French Good

- August 2010 **Cambridge Certificate of English language: Upper Intermediate level**, *LSI School, Tennis Rd, Cambridge (UK)*.
- October 2009 **International Certificate of French language**, *Diplome D'Etudes En Langue Francaise*, European level A2, Centre Culturel francaise, Milano.
- May 2005 **International Certificate of English language (FCE)**, *European level B2*, British Council, Milano.

## Abroad Experience in International Laboratories

- Winter – Spring 2013 **Nuclear Magnetic Resonance experiments at NorthWestern University (Prof. W. Halperin )**, *Evanston, IL (USA)*.
- April 2013 **Nuclear Magnetic Resonance experiments at National Magnet Lab**, *Tallahasse FL (USA)*.
- Summer 2012 **Cantilever magnetometry at Poggio Lab - University of Basel**, *(Switzerland)*.
- 2012 **Muon Resonance Experiments at RAL (Rutherford Appleton Laboratory)**, *Chilton (Oxford - United Kingdom)*.
- Winter 2011 **Nuclear Magnetic Resonance experiments at LCMI-CNRS**, *Grenoble (France)*.

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## Publications

- **April 2013:** *Glassy Transition in the Vortex Lattice of  $Ba(Fe_{0.93}Rh_{0.07})_2As_2$  superconductor, probed by NMR and ac-susceptibility*  
L. Bossoni, P. Carretta, M. Horvatić, M. Corti, A. Thaler, P. C. Canfield, EPL **102**, 17005
- **March 2012:** *NMR investigation of vortex dynamics in the  $Ba(Fe_{0.93}Rh_{0.07})_2As_2$  superconductor.*  
L. Bossoni, P. Carretta, R. Nath, M. Moscardini, M. Baenitz, C. Geibel Phys. Rev. B **83**, 014412;
- **January 2011:** *NMR and  $\mu$ SR study of spin correlations in  $SrZnVO(PO_4)_2$ : An  $S=1/2$  frustrated magnet on a square lattice*  
L. Bossoni, P. Carretta, A. Thaler, and P. C. Canfield, Phys. Rev. B **85**, 104525;

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## List of attended conferences with personal contributions

- **Magnet 2013, the third Italian Conference on Magnetism** (February 2013-Napoli (Italy))
- **Joint European Magnetic Symposium 2012** (September 2012-Parma (Italy))
- **Superconductors and functionalized Oxydes conference** (June 2012-Como (Italy))
- **Invited Speaker** at the University of Basel (February 2012-Switzerland)
- **XCVII SIF National Congress** (September 2011-L'Aquila (Italy))
- **Recent advances in Broad-Band Solid State NMR of correlated electronic systems** (September 2011-Trogir (Croatia))
- **Magnet 2011** (February 2011-Torino (Italy)).

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## Additional information

- 2011 – present Member of the Italian Association of Magnetism (AIMAGN)
- 2010 – present Member of the Italian Physics Society (SIF)