

Curriculum vitae of Livia Conti

Place and Date of Birth: Abano Terme (Padova, Italy), July 4, 1972
Marital status: married, two children
Citizenship: Italian

Education

2000 PhD, University of Trento, Italy. Thesis title: An optical readout for the AURIGA resonant gravitational wave detector. Advisor: Professor Stefano Vitale. The PhD was awarded on 17 February 2000.
1996 First-Class Honour (summa cum laude) graduation in Physics (the Italian "Laurea in Fisica") from the University of Padova, Italy. Thesis (in Italian): An optical readout for AURIGA: predicted sensitivity and preliminary measurements for a prototype. Advisor: Professor Massimo Cerdonio. Co-advisor: dr Carlo Rizzo.
1994-95 ERASMUS student at the Physics Department of Imperial College, London, UK.
1990 High school degree at Liceo Classico Tito Livio, Padova, with 60/60

Employment

From 08.2007 Researcher at the section of Padova of INFN (Istituto Nazionale di Fisica Nucleare); staff from 01.02.08
2004-2007 Contract researcher (in Italian: 'collaboratore di ricerca di primo livello a tempo determinato') at the Physics department of the University of Padova
Oct – Nov 2000 Visiting scientist at the Institute for Cosmic Ray Research of the University of Tokyo (Japan) invited by prof. Kazuaki Kuroda.
2000-2004 Post-doctoral research fellow (in Italian 'assegnista di ricerca') at the Physics Department of the University of Padova, Italy

Maternity leaves: Apr 2005-Nov 2005; Aug 2, 2002- Jan 5, 2003

Scientific Responsibilities

- Principal Investigator of the RareNoise project, funded by the European Research Council ERC. 2008-2013. I am leading a group of 7.5 Full Time Equivalent Physicists and Engineers.
- Local coordinator of the Dual R&D INFN project in 2006-2007

Lecturing, supervising and teaching experiences

- Assistant for 'Signal and Noise', course for 4th year Physics undergrads (Univ Padov, 2008)
- Assistant for 'Non-equilibrium Statistical Mechanics', course for Physics PhD students (Univ Padova, 2008)
- Lecturer of 'Interferometry and applications' at the 'Master in Applied Optics' of the Padova Univ., in 2009, 2004, 2003.
- Laboratory assistant for Engineering undergraduates of the Padova Univ., years 2000-02.
- Since 1999 I was supervisor/tutor of: 2 Physics undergraduates for their degree thesis, 1 ERASMUS Physics student of the Univ. of Leiden (NL) for a work that formed most of his degree thesis, 2 Physics undergraduates and 4 high-school students doing a summer stage.

Awards and other activities:

- Awarded a Starting Independent Researcher Grant by the European Research Council at the first ERC call (2007).
- Awarded (2002) the SIGRAV prize of the Italian Society of General Relativity and Gravitation with the following motivation: *For operating for the first time, after years of R&D during her PhD research activity, a "bar" gw detector with an optomechanical transducer, for her contributions to*

advanced optics, relevant to gw detectors, for her prominent contributions to theoretical and experimental studies on thermoelastic phenomena in mirrors and Fabry-Perot cavities of interest both for interferometric gw detectors and for acoustic gw detectors and for her prominent contribution in generating the concept of a novel wideband and sensitive acoustic gw detector, the "dual sphere".

- Awarded (2001) the honorable mention of the Gravity Research Foundation for work related to the proposal of the Dual detector.
- Referee of *Class. and Quantum Gravity*, *Meas. Science and Technology*, *Jour. of Physics*, *Journal of Optics A*
- Member of the International Advisory Committee of the 6th Edoardo Amaldi Conference on Gravitational Waves, Japan, 2005.
- Chairman of the OG3.3 session of the 28th Int. Cosmic Ray Conference, Japan, 2003.

Main talks

- 2008 London (UK), ULT 2008: Frontiers of Low Temperature Physics, invited talk “Cooling macroscopic resonators in the AURIGA gravitational wave detector”
- 2007 Sydney (AU), “7th Edoardo Amaldi Conference on Gravitational Waves”. Talk: “R&D for the DUAL acoustic gravitational wave detector”
- 2004 Vietri sul mare (I), 16th SIGRAV conference on General Relativity and Gravitational Physics, invited talk: “Interferometric readout for acoustic gravitational wave detectors”
- 2001 Perth (AU), “4th Edoardo Amaldi Conference on Gravitational Waves”. Invited talk: “A wideband and sensitive gw detector for kHz frequencies: the dual sphere”
- 1999 Pasadena (USA) “3rd Edoardo Amaldi Conference on Gravitational Waves”. Invited talk: “An optical transduction chain for the AURIGA detector”

Main publications:

- A. Vinante *et al.*, *Feedback Cooling of the Normal Modes of a Massive Electromechanical System to Submillikelvin Temperature*, *Phys. Rev. Lett.* **101**, 033601 (2008)
- J.-P. Zendri *et al.*, *Loss budget of a setup for measuring mechanical dissipations of silicon wafers between 300 and 4 K*, *Rev. Sci. Instrum.* **79**, 033901 (2008)
- M. Bonaldi *et al.*, *Principles of wide bandwidth acoustic detectors and the single-mass dual detector*, *Phys. Rev. D* **74** (2006) 022003
- L. Baggio *et al.*, *Upper Limits on Gravitational-Wave Emission in Association with the 27 Dec 2004 Giant Flare of SGR1806-20*, *Phys. Rev. Lett.* **95** (2005) 081103
- L. Baggio *et al.*, *3-Mode Detection for Widening the Bandwidth of Resonant Gravitational Wave Detector*, *Phys. Rev. Lett.* **94** (2005) 241101
- M. Bignotto *et al.*, *New suspension system for the gravitational wave bar detector AURIGA*, *Rev. Sci. Instrum.* **76** (2005) 084502
- L. Conti, M. De Rosa, F. Marin, *High-spectral-purity laser system for the AURIGA detector optical readout*, *J. Opt. Soc. Am. B* **20** (2003) 462
- L. Conti *et al.*, *Room temperature gravitational wave bar detector with optomechanical readout*, *Jour. Appl. Phys.* **93** (2003) 3589
- T. Briant, M. Cerdonio, L. Conti, A. Heidmann, A. Lobo, M. Pinard, *Thermal and back-action noises in dual-sphere gravitational-wave detectors*, *Phys. Rev. D* **67** (2003) 102005
- F. Marin, L. Conti, M. De Rosa, *A folded Fabry-Perot cavity for optical sensing in gravitational wave detectors*, *Phys. Lett. A* **309** (2003) 15-23
- M. De Rosa, L. Conti, M. Cerdonio, M. Pinard, F. Marin, *Experimental Measurement of the Dynamic Photothermal Effect in Fabry-Perot Cavities for Gravitational Wave Detectors*, *Phys. Rev. Lett.* **89** (2002) 237402
- M. Cerdonio, L. Conti, F. Heidmann, M. Pinard, *Thermoelastic effects at low temperatures and quantum limits in displacement measurements*, *Phys. Rev. D* **63** (2001) 082003

- M. Cerdonio, L.Conti, J.A.Lobo, A.Ortolan, L. Taffarello, J.P.Zendri, *Wideband Dual Sphere Detector of Gravitational Waves*, Phys. Rev. Lett. **87** (2001) 031101.
- L. Conti, M. De Rosa, F. Marin, *Low-amplitude-noise laser for AURIGA detector optical readout*, Appl. Opt., **39** (2000) 5732-5738
- Z.A.Allen *et al.*, *First Search for Gravitational Wave Bursts with a Network of Detectors*, Phys. Rev. Lett. **85** (2000) p.5046-5050.
- L. Conti *et al.*, *Optical transduction chain for gravitational wave bar detectors*, Rev. Sci. Instrum. **69** (1998) 554