Simone Mastrogiovanni

Curriculum Vitae

Personal information

Education

2015–Now **Ph.D. student with fellowship in Astronomy, Astrophysics and Space Sciences at University of Rome "Sapienza"**, Rome, Joint PhD University of Rome "La Sapienza" and "Tor Vergata".
The PhD project consists in the development of data analysis pipelines able to detect continuous gravitational waves from gamma-ray sources identified by the LAT-Fermi satellite.

2013–2015 **Master of Science degree in Astronomy and Astrophysics with 110/110 cum laudae**, *University of Rome La Sapienza*, Rome, Graduated on 26th October with a thesis "Wide-band search of continuous gravitational wave from central compact objects in supernovae remnants", Supervisors Dr.C.Palomba.
In this thesis I have developed a fully coherent algorithm able to explore a narrow region in the parameter space for continuous gravitational waves searches. Moreover I have applied it in a example case, gravitational waves search from a central compact object in a supernova remnant.

2010–2013 **Bachelor degree in physics with 110/110 cum laudae**, *University of Rome La Sapienza*, Rome, Graduated on 1st October 2013 with a thesis " Gravitational Waves effect on CMB polarization",Supervisors Prof.Francesco Piacentini.
In this bachelor thesis I have reviewed the effect of gravitational waves on the polariation of the CMB.

2005–2010 **Graduated from high school with 100/100 cum laudae**, *Liceo Scientifico Tecnologico*, Civitavecchia.

2010 **FCE achieved with grade C**.

2007 **PET achieved**.

Experience

Workshop

21-23 September 2016 **Astrophysics workshop for PhD students** Speaker "Continuous gravitational waves searches from Fermi-LAT sources"

20 September **String Theory and Inflation** Workshop participant in Rome Univeristy of Tor Vergata

29 August-1 September 2016 **LSC-Virgo collaboration meeting Glasgow** Speaker at CW f2f "O1 Narrow-band searches results"

14-18 March 2016 **LSC-Virgo collaboration meeting Pasadena** Remote speaker at CW f2f "Improvment and preliminary results of Narrow-band search pipeline with O1 data"

Via Barbarani n 16,Civitavecchia(Rome), Italy
mobile:+39 3334046973-email:mastrogiovanni.simo@gmail.com

31-4 August-September **LSC-Virgo collaboration meeting** Speaker at CW f2f, "Extension of the 5-vectors method to wider band searches"

12-18 July 2015 **Marcel Grossmann meeting XIV** Workshop participant in Rome

August 2014 **Astro-GR/VESF** Workshop participant in Monte Porzio Catone

Vocational

2014–2015 **Assitant at physics laboratory for bachelor's students (mechanics,circuits lab)**, *University Of Rome La Sapienza*, Rome.
Place obtained winnig collaboration fellowship of physics department

2011–2014 **Librarian in physiscs department**, *University Of Rome La Sapienza*, Rome.
Place obtained winnig collaboration fellowship of physics department

Miscellaneous

27-29 June **Virgo week spearker:** "Actuator's Transfer function for calibration"

2-4 May 2016 **Virgo week spearker:** "Narrow-band searches for Crab and Vela pulsar with advanced detectors"

3-5 February **Virgo week spearker:** " Search for CW from unidentified Fermi source"

1-4 July 2015 **Virgo week spearker:** "Improving performances of CW narrow-band searches"

February-June 2015 **Attended excellence courses for master's students** in physics department. Courses subjects: Bayesan approach for data analysis-*Prof.G. D'Agostini*

Jan-Jul 2013 **Study of the quality factor of a sapphire fiber for KAGRA** interferometer, work done as an integrated part of a MS course

2011-2013 **Excellence courses for bachelor's students attended and concluded** in physics department. Courses subjects:
- Hyperbolic differential equation-*Prof.A.Terracina*
- Extension of analytical mechanics-*Prof.M.Testa*
- CMB's observable and experiments-*Prof.P.De Bernardis*
- A first apporach to Relativistic quantum mechanics- *Prof.M.Testa*

July 2010 Language skill programme in Cheltenham attended with Inlingua School

Awards

2016 Funds for the project:*Development of GPU-based algorithm for continuous gravitational waves searches*, "Progetto avvio alla ricerca"Sapienza University of Rome.

2016 French embassy in Italy-funds to organize a day workshop with french researchers

2016 Award "Tito Maiani" 2016 for master thesis in physics- Accademia dei Lincei

2015 Admitted to excellence courses in Astronomy-Astrophysics for Masters students

2014-2015 Collaboration fellowship in as laboratory assistant for bachelor's students

2014-2015 Laziodisu Scholarship

2013-2014 Collaboration fellowship in department's library

2012-2013 Collaboration fellowship in department's library

2012-2013 Laziodisu Scholarship

2011-2012 Collaboration fellowship in department's library

2011-2012 Laziodisu Scholarship

2011 Admitted to excellence courses in physics department for bachelor's student

Computer skills

Programming languages	C,C++,Pascal,Fortran90,Matlab, CUDA C (beginner)
programs	LaTeX, OpenOffice, Microsoft Office, QtiPlot, Origin
operating systems	Linux,Windows

Languages

Italian	**Mothertongue**
English	**Intermediate**

Interests

- Scuba diving
- Trekking
- Climbing
- Chess

Publications

[1] J. et al Aasi. First low frequency all-sky search for continuous gravitational wave signals. *Phys. Rev. D*, 93:042007, Feb 2016.

[2] B. P. Abbott, R. Abbott, T. D. Abbott, M. R. Abernathy, F. Acernese, K. Ackley, C. Adams, T. Adams, P. Addesso, R. X. Adhikari, and et al. A First Targeted Search for Gravitational-Wave Bursts from Core-Collapse Supernovae in Data of First-Generation Laser Interferometer Detectors. *ArXiv e-prints*, May 2016.

[3] B. P. Abbott, R. Abbott, T. D. Abbott, M. R. Abernathy, F. Acernese, K. Ackley, C. Adams, T. Adams, P. Addesso, R. X. Adhikari, and et al. Search for continuous gravitational waves from neutron stars in globular cluster NGC 6544. *ArXiv e-prints*, July 2016.

[4] B. P. et al. Abbott. Comprehensive all-sky search for periodic gravitational waves in the sixth science run ligo data. *Phys. Rev. D*, 94:042002, Aug 2016.

[5] B. P. et al. Abbott. Gw151226: Observation of gravitational waves from a 22-solar-mass binary black hole coalescence. *Phys. Rev. Lett.*, 116:241103, Jun 2016.

[6] B. P. et al. Abbott. Search for transient gravitational waves in coincidence with short-duration radio transients during 2007–2013. *Phys. Rev. D*, 93:122008, Jun 2016.

[7] P. Leaci, P. Astone, S. D'Antonio, S. Frasca, C. Palomba, O. Piccinni, and S. Mastrogiovanni. Novel directed search strategy to detect continuous gravitational waves from neutron stars in low- and high-eccentricity binary systems. *ArXiv e-prints*, July 2016.

[8] The LIGO Scientific Collaboration, the Virgo Collaboration, B. P. Abbott, R. Abbott, T. D. Abbott, M. R. Abernathy, F. Acernese, K. Ackley, C. Adams, T. Adams, and et al. An improved analysis of GW150914 using a fully spin-precessing waveform model. *ArXiv e-prints*, June 2016.

[9] The LIGO Scientific Collaboration, the Virgo Collaboration, B. P. Abbott, R. Abbott, T. D. Abbott, M. R. Abernathy, F. Acernese, K. Ackley, C. Adams, T. Adams, and et al. Binary Black Hole Mergers in the first Advanced LIGO Observing Run. *ArXiv e-prints*, June 2016.

[10] The LIGO Scientific Collaboration, the Virgo Collaboration, B. P. Abbott, R. Abbott, T. D. Abbott, M. R. Abernathy, F. Acernese, K. Ackley, C. Adams, T. Adams, and et al. Directly comparing GW150914 with numerical solutions of Einstein's equations for binary black hole coalescence. *ArXiv e-prints*, June 2016.

[11] The LIGO Scientific Collaboration, the Virgo Collaboration, B. P. Abbott, R. Abbott, T. D. Abbott, M. R. Abernathy, F. Acernese, K. Ackley, C. Adams, T. Adams, and et al. The basic physics of the binary black hole merger GW150914. *ArXiv e-prints*, August 2016.

[12] The LIGO Scientific Collaboration, the Virgo Collaboration, B. P. Abbott, R. Abbott, T. D. Abbott, M. R. Abernathy, F. Acernese, K. Ackley, C. Adams, T. Adams, and et al. Upper limits on the rates of binary neutron star and neutron-star–black-hole mergers from Advanced LIGO's first observing run. *ArXiv e-prints*, July 2016.

[13] S. Walsh, M. Pitkin, M. Oliver, S. D'Antonio, V. Dergachev, A. Krolak, P. Astone, M. Bejger, M. Di Giovanni, O. Dorosh, S. Frasca, P. Leaci, S. Mastrogiovanni, A. Miller, C. Palomba, M. Alessandra Papa, O. J. Piccinni, K. Riles, O. Sauter, and A. M. Sintes. A comparison of methods for the detection of gravitational waves from unknown neutron stars. *ArXiv e-prints*, June 2016.

In Fede

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Via Barbarani n 16,Civitavecchia(Rome), Italy
mobile: +39 3334046973-email:mastrogiovanni.simo@gmail.com