

CURRICULUM VITAE of *GIANFRANCO BRUNETTI*

PERSONAL DATA:

Born: 07/08/1971

Nationality: Italian

Marital Status: Married (since May 2007)

Present Position: Researcher

Present Address: Istituto di Radioastronomia, via P. Godetti 101, 40129 Bologna, Italy

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EDUCATION:

- 1995: Degree “Summa cum Laude” in Astronomy from University of Bologna
- 1996-1999: PhD in Astronomy from University of Bologna
- 1999-2001: Post Doc Fellow at Dept. Astronomy of Bologna Univ. & IRA-CNR
- 2001-now: Researcher at INAF- Istituto di Radioastronomia

RESEARCH:

He is a theoretical researcher active in:

- physics of galaxy clusters and non thermal cluster-components
- physics of radio galaxies and quasars
- particle acceleration mechanisms & Cosmic Rays
- relativistic astrophysics
- radiative mechanisms in astrophysics
- plasma physics & MHD turbulence

His most important contribution is on radio galaxies and their X-ray emission (“Brunetti mechanism”, Brunetti et al. 1997, Brunetti 2000), and on particle acceleration and MHD turbulence in galaxy clusters, in particular on the origin of relativistic particles and cluster-Radio Halos (“reacceleration model”, Brunetti et al. 2001, 2004, 2009).

- He has about **140** publications, also in the Journals "Nature" and "Science".
- He is supervisor of **17** Undergraduate & Graduate Students and Post Doc Fellows.

REVIEW & INVITED PAPERS:

- **5** Invited Reviews on “Non thermal phenomena in galaxy clusters” given at International Conferences
- **1** Review Paper: “Gamma Rays from Galaxy Clusters”, Int. J. of Mod. Phys. A 22, 681 (2007)
- **11** Invited Talks on “Physics of radio galaxies” and “Non thermal phenomena in galaxy clusters” given at International Conferences

- **4** Invited Lectures on “Extragalactic radio sources” and “galaxy clusters” given at National and International Advanced Schools in Astrophysics
- **34** (about) Seminars given at Italian and Foreign Research Institutes

MAIN COMMITMENTS:

Editor Activity :

- Member of the “Board of Scientific Editors” of the Refereed Journal “New Astronomy” (Springer)
- Editor in Chief of “The Physics of Relativistic Jets in the Chandra and XMM Era”, 2003 NewA Rev. 47
- Editor of “The Origin and Evolution of Cosmic Magnetism”, 2006 AN 327

Conference Scientific Boards :

- Chair and Member of 10 “Scientific Organising Committees” (SOC) of National and International Conferences on “Extragalactic radio sources” and “Galaxy clusters”

Key Projects & Reserved Access to telescopes :

- Member of the “Core Team of Scientists” of the “LOFAR Survey Key Project”
- Co-Chair of the Working Group “Galaxy Clusters” of the “LOFAR Survey Key Project”

Involvement in Official Working Groups :

- Italian delegate in the International Working Group on “LOFAR Internationalization”
- National Coordinator of the Working Group “Osservazioni dell’Universo dalla Luna at radio-mm frequencies” (ASI)
- Member of the National Working Group “LOFAR: interest and perspectives for the National Community” (INAF)
- Member of the National Working Group “Feasibility study on High Energy Astrophysics: fields of interest and perspectives for the National Community” (INAF/CNR)
- Member of the International Working Group “European VLBI Network Science Vision 2012”

ACTIVITY OF PEER REVIEW:

- Referee for the Netherlands Organization for Scientific Research (NWO)
- Referee for the following International Journals:
 - *Astrophysical Journal*
 - *MNRAS*
 - *Astronomy & Astrophysics*
 - *Astronomical Notes*
 - *Astronomical Lett. & Comm.*
 - *Space Science Reviews*

P.I. OF AWARDED RESEARCH GRANTS:

- 2001: "Mergers of galaxy clusters and acceleration of relativistic particles" (funded by CNR)
- 2001: "The Physics of Relativistic Jets in the Chandra and XMM Era" (funded by INAF)

- 2006: "Observations of the Universe from the Moon (radio to mm)" (funded by ASI)
- 2007: "Acceleration of high energy particles in galaxy clusters and non thermal emission" (funded by ASI)
- 2008: "Acceleration of high energy particles in galaxy clusters and non thermal emission" (funded by ASI)
- 2008: PRIN INAF: "Non thermal components in galaxy clusters" (funded by INAF)
- 2009: "Acceleration of high energy particles in galaxy clusters and non thermal emission" (funded by ASI)
- 2010: PRIN INAF: (Local RU) "Towards an Italian network for computational cosmology" (funded by INAF)

GRANTED INVITED RESEARCH PERIODS:

- 2002 : *Visiting Researcher* at the Max Planck Institute for Astronomy, MPIA, Heidelberg, Germany
- 2005 : *Visiting Researcher* at Max Planck Institute for Astrophysics, MPA, Garching (Munich), Germany
- 2008 : *Visiting Researcher* at Smithsonian Center for Astrophysics, CfA, Cambridge, USA
- 2008 : *Visiting Researcher* at Naval Research Laboratories, NRL, Washington, USA
- 2008 : *Visiting Researcher* at the National Radio Astronomy Observatory (NRAO) Virginia, USA
- 2010 : *Visiting Researcher* at Smithsonian Center for Astrophysics, CfA, Cambridge, USA
- 2010 : *Visiting Researcher* at Naval Research Laboratories, NRL, Washington, USA
- 2010 : *Visiting Researcher* at Wisconsin University, Madison, USA

P.I. & Co I. OF AWARDED PROPOSALS:

- 600,000 CPU time at Supercomputers (CINECA)
- Radio: 1,300 hrs at VLA, GMRT, ATCA
- Optical & IR: 100 hrs at Spitzer, TNG, VLT, HST, NTT
- X-rays: 1.7 Mseconds at ROSAT-HRI, BeppoSAX, Chandra, XMM