

**ATTILIO FERRARI**  
**CURRICULUM VITAE**  
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**Present positions**

1. Full professor of Astronomy and Astrophysics at the Faculty of Sciences of the University of Torino, Italy
2. Director of the Inter-University Consortium for Space Sciences (CIFS), Italy
3. Representative for the National Institute of Astrophysics (INAF), Italy, in the Committee INAF-PNRA (Piano Nazionale Ricerca Antartica) for the coordination of astrophysical activities at the Dome C station, Antarctica
4. Italian coordinator of the Protocol of Cooperation in astrophysics and cosmic physics between the Department of General Physics of the University of Torino and the Enrico Fermi Institute of the University of Chicago
5. Coordinator of the AGN Working group for the Italian space mission AGILE and member of the science team of the Italian collaboration to the US mission GLAST
6. Scientific Users' Selection Panel Member for Astrophysics of HPC-Europa, Pan-European Research Infrastructure on High-Performance-Computing
7. Chairman of the project JETS (Joint Experiment Theory Simulations) between the Department of General Physics of the University of Torino, the Astronomical Observatory of Torino and the Department of Fluid-dynamics of the Politecnico of Torino
8. Chairman of the collaboration protocol between the Center for Magnetic Self-Organization in Laboratory and Astrophysical Plasmas (CMSO) and the project JETS
9. Visiting Professor/Scholar at the Department of Astronomy and Astrophysics of the University of Chicago since 1998
10. Associate to the FLASH Center of the University of Chicago

**Other positions**

1. Director of the Astronomical Observatory of Torino (1986-2001)
2. Board of Directors of the National Consortium of Astronomy and Astrophysics CNAA (1996-2001)
3. Board of Directors of the Istituto Nazionale di Astrofisica – INAF (2000-2003)
4. Council of the Department of General Physics of the University of Torino (1995-2001)
5. Time allocation committee of the European Very Long Baseline Interferometry Network
6. Time allocation committee of the Italian space mission BeppoSAX
7. Founder and first President of the Associazione ApritiCielo managing the Torino Planetarium INFINI.TO

**Academic activities**

1. Lecturer of Astronomy in the Faculty of Sciences of the University of Torino
2. Lecturer of Theoretical Astrophysics in the Faculty of Sciences of the University of Torino

3. Lecturer of Plasma Astrophysics in the Faculty of Sciences of the University of Torino
4. Coordinator of the Master and Doctorate degrees in Astrophysics and Cosmic Physics in the Faculty of Sciences of the University of Torino
5. Lecturer at the Graduate School of the University of Chicago on “Physics of Extragalactic Jets” in 1998-1999, on “Accretion Disks” in 1999-2000 and on “Particle Dynamics” in 2001-2002
6. Director of the Course CXLII of the Varenna International School of Physics Enrico Fermi in 1999
7. Lecturer of Plasma Astrophysics at the Italian National Doctorate School
8. Advisor of Master and Ph.D. thesis in astronomy, astrophysics, plasma physics

### **Society membership**

1. International Astronomical Union
2. European Astronomical Society
3. Accademia delle Scienze di Torino
4. Società Italiana di Fisica
5. Società Astronomica Italiana
6. Società Italiana di Relatività e Gravitazione

### **Main research fields**

1. Theoretical models of the energetics and morphology of extragalactic radio sources and active galactic nuclei
2. Numerical simulations of nonlinear hydrodynamical and magneto-hydrodynamical supersonic flows from active stars and galaxies
3. Laboratory experiments on supersonic jets for the validation of theoretical models
4. Development and production of the astrophotometric catalogue GSC-2
5. Development of medium infrared cameras for ground telescopes in Antarctica
6. Definition of the scientific objectives of space projects in radio, optical and gamma rays

### **Scientific collaborations**

1. Department of Astronomy and Astrophysics and FLASH Centre of the University of Chicago (USA)
2. Space Telescope Science Institute, Baltimore (USA)
3. University of California, Irvine (USA)
4. University of Sydney (Australia)
5. Center for Astrophysics, Cambridge (USA)
6. Max-Planck Institut für extraterrestrische Physik, Garching (Germany)
7. Massachusetts Institute of Technology, Cambridge (USA)

### Recent scientific publications

A. Ferrari

Modeling astrophysical jets

Ann. Rev. Astron. Astrophys. 36, 539, 1998

M. Micono, S. Massaglia, G. Bodo, A. Ferrari

Kelvin-Helmholtz instabilities in stellar jets. III. Evolution of spatial perturbations

Astron. Astrophys. 333, 989, 1998

M. Micono, S. Massaglia, G. Bodo, A. Ferrari

Kelvin-Helmholtz instabilities in stellar jets IV. On the origin of emission knots

Astron. Astrophys. 333, 1001, 1998

G. Benford, A. Ferrari

Final remarks (review)

In "Astrophysical Jets - Open Problems", S. Massaglia & G. Bodo eds., Gordon & Breach, p. 247, 1998

G. Bodo, P. Rossi, S. Massaglia, A. Ferrari, A. Malagoli, R. Rosner

Three-dimensional simulations of jets

Astron. Astrophys. 333, 1117, 1998

M. Micono, N. Zurlo, S. Massaglia, A. Ferrari, D.B. Melrose

Diffusive shock acceleration in extragalactic jets

Astron. Astrophys. 349, 323, 1999

S. Massaglia, M. Micono, N. Zurlo, A. Ferrari

Kelvin-Helmholtz instabilities and particle acceleration in jets

The Radiogalaxy Messier 87, Proceedings of the Ringberg Castle

Workshop, H.-J. Röser & K. Meisenheimer eds., Springer, Berlin, p. 246, 1999

A. Ferrari, P. Rossi, A. Capetti, G. Bodo

Understanding NLR in Seyfert galaxies

Revista Mex. Astron. Astrophys. 9, 329, 2000

A. Ferrari

Astrophysical plasmas

Course CXLII of the International School of Physics E. Fermi, Plasmas in the Universe, Varenna, B.

Coppi & A. Ferrari eds., IOS Press, Amsterdam p. 1, 2000

A. Ferrari

Active galactic nuclei. Accretion disks and jets. I

Course CXLII of the International School of Physics E. Fermi, Plasmas in the Universe, Varenna, B.

Coppi & A. Ferrari eds., IOS Press, Amsterdam p. 419, 2000

- A. Ferrari  
Active galactic nuclei. Accretion disks and jets. II  
Course CXLII of the International School of Physics E. Fermi, Plasmas in the Universe, Varenna, B. Coppi & A. Ferrari eds., IOS Press, Amsterdam p. 439, 2000
- P. Rossi, A. Capetti, G. Bodo, S. Massaglia, A. Ferrari  
Understanding narrow line regions in Seyfert galaxies: numerical simulation of jet-cloud interaction  
Astron. Astrophys. 356, 73, 2000
- M. Micono, G. Bodo, S. Massaglia, P. Rossi, A. Ferrari, R. Rosner  
Kelvin-Helmholtz instabilities in three-dimensional radiative jets  
Astron. Astrophys. 360, 795, 2000
- M. Micono, G. Bodo, S. Massaglia, P. Rossi, A. Ferrari  
On the matter entrainment by stellar jets and the acceleration of molecular outflows  
Astron. Astrophys. 364, 318, 2000
- S. Massaglia, A. Ferrari, M. Micono, G. Bodo, P. Rossi, R. Rosner, A. Malagoli  
Structure and dynamics of astrophysical jets  
Mem S.A.It. 71, 945, 2000
- M. Micono, S. Massaglia, G. Bodo, P. Rossi, A. Ferrari  
On the matter entrainment by stellar jets and the acceleration of molecular outflows  
In Emission Lines from Jet Flows, Proceedings Isla Mujeres  
Revista Mex.Astron. Astrophys. 10, 333, 2001
- P. Rossi, G. Bodo, A. Capetti, A. Ferrari, S. Massaglia  
The morphology of FR II radio sources  
Mem. S.A.It. 72, 85, in: AGN in the year 2000. Fourth National Meeting on Active Galactic Nuclei, Trieste, edited by A. Celotti, 2001.
- G. Bodo, P. Rossi, A. Capetti, S. Massaglia, A. Ferrari  
Simulations and observations of cocoon morphologies  
Particles and Fields in Radio Galaxies Conference, ASP Conference Proceedings Vol. 250. Edited by Robert A. Laing and Katherine M. Blundell. San Francisco: Astronomical Society of the Pacific, 315, 2001
- C. Zanni, G. Bodo, P. Rossi, S. Massaglia, A. Durbala, A. Ferrari  
X-ray emission from expanding cocoons  
Astron. Astrophys. 402, 949, 2003
- C. Zanni, S. Massaglia, G. Bodo, P. Rossi, A. Capetti, A. Ferrari  
Propagation of extragalactic jets in stratified media  
Mem S.A.It. Suppl., 1, 155, 2003
- M. Candidi, A. Ferrari  
Concordia Station at Dome-C Site for Astronomical Research  
Astronomy in Antarctica, Proceedings of the 25<sup>th</sup> IAU General Assembly, Special Session 2, Sydney,

2003

G. Bodo, P. Rossi, A. Mignone, S. Massaglia, A. Ferrari  
Deceleration of relativistic jets  
New Astronomy Reviews, 47, 557, 2003

A. Ferrari  
Giovanni Antonio Amedeo Plana  
In "Maestri dell'Ateneo Torinese", 600° anniversario dell'Ateneo, Stamperia Artistica,  
Torino, 173, 2004

A. Ferrari  
Agn Jet Modeling: Setting the Stage (review)  
Astrophysics and Space Science, 293, 15, 2004

C. Zanni, A. Ferrari, S. Massaglia, G. Bodo, P. Rossi  
On the MHD Acceleration of Astrophysical Jets  
Astrophysics and Space Science, 293, 99, 2004

P. Rossi, G. Bodo, S. Massaglia, A. Ferrari, A. Mignone  
Entrainment and Deceleration of Relativistic Jets  
Astrophysics and Space Science, 293, 149, 2004

G. Bodo, C. Zanni, G. Murante, P. Rossi, S. Massaglia, A. Ferrari  
Numerical Simulations of the Interaction of Jets with the Intracluster Medium  
Astrophysics and Space Science, 293, 247, 2004

G. Bodo, C. Zanni, S. Massaglia, A. Ferrari, P. Rossi  
Adaptive Mesh Refinement simulations of jets  
Mem. S.A.It. Suppl., 4, 9, 2004

G. Bodo, G. Murante, P. Rossi, G. Chagelishvili, A. Tevzadze, A. Ferrari  
Vortices and waves in planar and disk flows  
In "MHD Couette Flows: Experiments and Models", Proc. edited by R. Rosner, G. Rüdiger and A.  
Bonanno, New York: American Institute of Physics, Vol. 733, 177, 2004

A. Ferrari  
Le collezioni scientifiche dell'Osservatorio Astronomico  
In "Le collezioni scientifiche dell'Ateneo Torinese", 600° anniversario dell'Ateneo,  
Fondazione Cassa di Risparmio di Torino, 2004

G. Bodo, G. Chagelishvili, G. Murante, A. Tevzadze, P. Rossi, A. Ferrari, A.  
Spiral density wave generation by vortices in Keplerian flows  
Astron. Astrophys., 437, 9, 2005

C. Zanni, G. Murante, G. Bodo, S. Massaglia, P. Rossi, A. Ferrari,  
Heating groups and clusters of galaxies: The role of AGN jets  
Astron. Astrophys., 429, 399, 2005

C. Zanni, A. Ferrari, S. Massaglia, G. Bodo, P. Rossi  
Launching jets from resistive accretion disks  
Mem. S.A.It., 76, 372, 2005

A. Ferrari, R. Ferrari  
Il mutamento climatico: fatti e miti  
Quaderni Acc. Scienze Torino, vol. 13, 25 (2006)

A. Ferrari  
Astrophysical Jets Observations, Theory, Experiments  
Invited review at the 7th International Conference of the Hellenic Astronomical Society 2005.  
AIP Conference Proceedings, 848, 453, 2006

A. Mignone, G. Bodo, S. Massaglia, T. Matsakos, O. Tesileanu, C. Zanni, A. Ferrari  
PLUTO: a Numerical Code for Computational Astrophysics  
Astrophys. Journal Suppl., 170, 228, 2007

C. Zanni, A. Ferrari, R. Rosner, G. Bodo, S. Massaglia  
MHD simulations of jet acceleration from Keplerian accretion disks. The effects of disk resistivity  
Astron. Astrophys., 469, 811, 2007

A. Tevzadze, G. Bodo, G. Chagelishvili, A. Mignone, P. Rossi, A. Ferrari  
Stability and nonlinear adjustment of vortices in Keplerian flows  
Astron. Astrophys., 475, 51, 2007

A. Ferrari  
Computational Challenges in High-Energy Astrophysics  
Proceedings of the Symposium "Grid Open Days at the University of Palermo", R. Barbera ed.,  
Consorzio COMETA, Palermo, Italy, pg. 17, 2008

G. Bodo, A. Mignone, F. Cattaneo, P. Rossi, A. Ferrari  
Aspect ratio dependence in magnetorotational instability shearing box simulations  
Astron. Astrophys., submitted (2008)

A. Mignone, G. Bodo, F. Cattaneo, P. Rossi, A. Ferrari  
Multiple States in Magneto-Rotational Dynamics  
Astron. Astrophys., submitted (2008)

P. Rossi, A. Mignone, G. Bodo, S. Massaglia, A. Ferrari  
Formation of dynamical structures in relativistic jets: the FRI case  
Astron. Astrophys., submitted (2008)

Z. Osmanov, A. Mignone, G. Bodo, S. Massaglia, A. Ferrari  
On the linear theory of Kelvin-Helmholtz instabilities of relativistic magnetohydrodynamic planar flows  
Astron. Astrophys., submitted (2008)

