

Curriculum Vitae – *Marta Volonteri*

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Ann Arbor, MI 48109
USA

Research interests

Theory: formation and evolution of massive black holes, cosmology and structure formation, stellar dynamics

Observations: high redshift universe, galaxy evolution, active nuclei properties

Education:

PhD in Astronomy, University of Milan 2003
Advisors: Prof. P. Madau, Prof. F. Haardt
MS *cum laude* in Physics, University of Milan 1999
Advisors: Prof. G. Chincarini, Dr. P. Saracco

Positions

Assistant Professor 2007-present
University of Michigan, Ann Arbor, MI, USA
Research Associate 2004-2006
Institute of Astronomy, Cambridge, UK
Postgraduate Research Astronomer 2002-2004
University of California, Santa Cruz, USA

Teaching

‘Introductory Astronomy: Stars, Galaxies, and the Universe’ 2008, 2009
University of Michigan, Ann Arbor, MI, USA
‘Introduction to Astrophysics’ 2008, 2009
University of Michigan, Ann Arbor, MI, USA
‘Formation and Evolution of Black Holes’ 2009
Astrophysics Summer School, Italy
‘Black Hole Formation and Light-up’ 2007
Astrophysics Summer School, Italy
‘Probability and Statistics’ 2001
Università degli Studi dell’Insubria, Italy
‘Physics Laboratory in Mechanics’ 2001
Università degli Studi dell’Insubria, Italy

Students and postdocs

Postdoctoral supervision:
Massimo Dotti University of Michigan 2008-present

Graduate students supervision:

Sandor Van Wassenhove	University of Michigan	2008-present
Shannon Schmoll	University of Michigan	2007-present
Shengnian Xu	University of Science & Technology of China	2008-2009
Bernadetta Devecchi	University of Milano-Bicocca	2007-2009
Federico Marulli	Università degli Studi di Bologna, Bologna, Italy	2004-2007
Alberto Sesana	Università degli Studi dell'Insubria, Italy	2003-2005

Undergraduate students supervision:

Albino Perego	Università degli Studi di Milano, Italy	2008-present
Duncan Campbell	University of Michigan	2008-present
Gary Foreman	University of Michigan	2007-2008
Marcella Fontana	Università degli Studi dell'Insubria, Italy	2005-2007

Dissertation committee:

Brian Nord	University of Michigan, Physics
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Visiting positions:

Visiting Scholar, Northwestern University	Oct-Nov 2006
Member, Kavli Institute for Theoretical Physics	May-July 2006
Member, Aspen Center for Physics	June 2004

Professional activities

- Reviewer, NSF
- Reviewer, NASA
- Reviewer, Chandra TAC
- Reviewer, Magellan TAC
- Scientific Organizing Committee, “What Drives the Growth of Black Holes”, 2010, Durham, UK
- Scientific Organizing Committee, “Central Massive Objects: The Stellar Nuclei - Black Hole connection”, 2010, ESO, Germany
- Scientific Organizing Committee, “COSPAR: Probing strong gravity with gravitational and electromagnetic waves”, 2010, Bremen, Germany
- Scientific Organizing Committee, “Formation and Evolution of Black Holes”, 2010, Aspen, CO
- Scientific Organizing Committee, “Intermediate-Mass Black Holes”, 2009, Irvine, CA
- Scientific Organizing Committee, “The central kiloparsec”, 2008, Crete, Greece
- Editor, LISA Science Case (BEPAC), 2007
- Member, LISA Parameter Estimation Taskforce, 2008
- Contributor, “Massive Black Holes Across Cosmic Time”, White paper, Astronomy & Astrophysics Decadal survey, 2009
- Contributor, “Spin and Relativistic Phenomena Around Black Holes”, White paper, Astronomy & Astrophysics Decadal survey, 2009
- Contributor, “The Growth of Supermassive Black Holes Over Cosmic Time”, White paper, Astronomy & Astrophysics Decadal survey, 2009

- Contributor, “The Nuclei of Low-Mass Galaxies and the Search for the Smallest Massive Black Holes”, White paper, Astronomy & Astrophysics Decadal survey, 2009

Memberships

International Astronomical Union (IAU)	2006
American Astronomical Society (AAS)	2008

Fellowships and awards:

IUPAP Astrophysics Young Physicists Honorable Mention	2008
PhD Fellowship, Università degli Studi di Milano, Italy	1999-2002
Scholarship from the Italian MURST	2000
Scholarship from CARIPO	1998

Departmental service

Chair, Open Faculty Search Committee	2008-2009
Co-organizer Astro-Coffee Meetings	2008-2009
Presenter for “Extreme Astrophysics” to prospective graduate students	2008
Chair Advisory Committee	2007-2009
Preliminary Exam Committee	2007-2009
Organizer, Extreme Astrophysics meetings	2007-2009
Computer Committee	2007-2008
Co-organizer of Accretion Reading meetings	2007-2008
High-energy Curriculum Committee	2007-2008
Magellan/MDM Time Allocation Committee	2007-2009
Beautification Committee	2007-2008
Graduate Admission Committee	2007
Undergraduate Curriculum Committee	2007

Invited talks and colloquia

- March 2010, Invited Talk, “The First Stars and Galaxies: Challenges for the Next Decade”, Austin, TX
- February 2010, Invited Review, “LISA Massive Black Hole Binaries in the Cosmic Landscape”, Zurich, Switzerland
- January 2010, Plenary Talk, American Astronomical Society Meeting, Washington, DC
- October 2009, Colloquium, University of California, Santa Cruz, CA
- September 2009, Colloquium, NOAO/Stewart Obs., Tucson, AZ
- August 2009, Invited Talk, “Matter and Electromagnetic Fields in Strong Gravity”, College Park, MD
- August 2009, Invited Talk, International Astronomical Union Symposium “Co-evolution of Central Black Holes and Galaxies”, Rio de Janeiro, Brasil
- August 2009, Invited Talk, International Astronomical Union Discussion “The First Galaxies - Theoretical Predictions and Observational Clues”, Rio de Janeiro, Brasil

- July 2009, Invited Talk, “Massive Black Hole Binaries and Their Coalescence in Galactic Nuclei”, Beijing, China (declined)
- June 2009, Invited Talk, “Accretion and ejection in AGN” , Como, Italy
- June 2009, Invited Talk, “The Monster’s Fiery Breath: Feedback in Galaxies, Groups, and Clusters”, Madison, WI (declined)
- May 2009, Invited Talk, American Physical Society Meeting, Denver, CO
- April 2009, Colloquium, Ohio State University, Columbus, OH
- March 2009, Invited Talk “Observational signatures of black hole mergers”, STScI, Baltimore, MD
- March 2009, Colloquium, Michigan State University, Lansing, MI
- January 2009, Invited Talk, American Astronomical Society Meeting, Long Beach, CA
- December 2008, Invited Talk, “Texas symposium on relativistic astrophysics”, Vancouver, Canada
- October 2008, Colloquium, Fermilab National Laboratory, Batavia, IL
- June 2008, Invited Talk, “Accretion and ejection in AGN” , Como, Italy
- May 2008, Invited Talk, Great Lakes Cosmology, Pittsburgh, PA (declined)
- May 2008, Invited Talk, LISA symposium , Barcelona, Spain (declined)
- May 2008, Invited Talk, “The Central Kiloparsec: Active Galactic Nuclei and Their Hosts”, Ierapetra, Greece
- April 2008, Colloquium, Columbia University, New York, NY
- March 2008, Colloquium, Penn State, State College, PA
- January 2008, Colloquium, Stanford University, Palo Alto, CA
- October 2007, Colloquium, University of Washington, Seattle, WA
- October 2007, Colloquium, University of Maryland, College Park, MD
- July 2007, Invited Talk, “Galaxy growth in a dark universe”, Heidelberg, Germany
- May 2007, Colloquium, Yale University, New Haven, CT, USA
- April 2007, Colloquium, NASA Goddard Space Center, Greenbelt, MD, USA
- April 2007, Invited Talk, STScI Symposium, Baltimore, MD, USA
- April 2007, Invited Talk, American Physical Society Meeting, Jacksonville, FL, USA
- March 2007, Colloquium, University of Toronto, Toronto, Canada
- February 2007, Colloquium, California Institute for Technology, Pasadena, CA, USA
- February 2007, Colloquium, University of Nevada, Las Vegas, NV
- November 2006, Colloquium, Northwestern University, Evanston, IL, USA
- October 2006, Colloquium, University of Chicago, Chicago, IL, USA
- August 2006, Colloquium, University of Durham, Durham, UK
- August 2006, Invited Talk, Marcel Grossmann Meeting, Berlin, Germany
- June 2006, Invited Talk, LISA Symposium, Greenbelt, MD, USA
- May 2006, Invited Talk, Sackler Conf. Cambridge, MA, USA

- November 2005, Invited Talk, “Relativistic Astrophysics and Cosmology - Einstein’s Legacy” Conf., Munich, Germany
- August 2005, Invited Talk: “MODEST 6” Conf., Evanston, IL, USA
- September 2005, Colloquium, University of Texas, Austin, TX, USA
- February 2005, Colloquium, Harvard-Smithsonian CfA, Cambridge, MA, USA
- May 2004, Invited Talk, “Making Waves with Intermediate Mass Black Holes” Conf., State College, PA, USA
- April 2003, Invited Talk, “The Astrophysics of Gravitational Wave Sources” Conf, College Park, MD, USA

Outreach

Research/outreach Talk	REU students	2007
Research/outreach Talk	Michigan Research Community	2008
Lecture	Saturday Morning Physics	2009
Lecture	Osher Foundation	2009
Lecture	Elderweiss Community	2009
Research/outreach Talk	Astrophysical Idol (AAS Meeting)	2009
Research/outreach Talk	Gruppo Astrofili Ingauna, Italy	2009

Publication list

Publications in refereed journals¹

- Citation report via SAO/NASA Astrophysics Data System: H index=18; 1379 citations.
 - Citation report via ISI Web of Knowledge: H index = 16; 1039 citations.
45. Massive black holes lurking in Milky Way satellites by *Van Wassenhove, S.*, **Volonteri, M.**, Walker, M., Gair, J. MNRAS, submitted
 44. Dual black holes in merger remnants. II: spin evolution and gravitational recoil by *Dotti, M.*, **Volonteri, M.**, *Perego, A.*, Colpi, M., Ruszkowski, M., Haardt, F., MNRAS, in press
 43. Constraining the Spin of the Black Hole in Fairall 9 with Suzaku by *Schmoll, S.*; Miller, J. M.; **Volonteri, M.**; Cackett, E.; Reynolds, C. S.; Fabian, A. C.; Brenneman, L. W.; Miniutti, G.; Gallo, L. C., 2009, ApJ, 703, 217
 42. The blazar S5 0014+813: a real or apparent monster? by Ghisellini, G., Foschini, L., **Volonteri, M.**, Ghirlanda, G., Haardt, F., Burlon, D., Tavecchio, F. 2009, MNRAS, 399, 24
 41. Relative Role of Stars and Quasars in Cosmic Reionization by **Volonteri, M.** & Gnedin, N. 2009, ApJ, 703, 2113
 40. Supermassive binary black holes: expectations at $z < 1$ by **Volonteri, M.**, Miller J. M. & *Dotti M.* 2009, ApJL, 703, 86
 39. Mass and spin coevolution during the alignment of a black hole in a warped accretion disc by *Perego, A.*, *Dotti, M.*, Colpi, M. & **Volonteri, M.**, 2009, MNRAS 399, 2249
 38. Journey to the $M_{\text{BH}} - \sigma$ relation: the fate of low mass black holes in the Universe by **Volonteri, M.** & Natarajan, P., 2009, MNRAS in press
 37. SDSSJ092712.65+294344.0: a candidate massive black hole binary by *Dotti, M.*, Montuori, C., Decarli, R., **Volonteri, M.**, Colpi, M., Haardt, F., 2009, MNRAS Letters, 398, 73
 36. The Chandra COSMOS Survey, I: Overview and Point Source Catalog by Elvis, M., Civano, F., Vignali, C., Puccetti, S., Fiore, F., Cappelluti, N., Aldcroft, T. L., Fruscione, A., Zamorani, G., Comastri, A., Brusa, M., Gilli, R., Miyaji, T., Damiani, F., Koekemoer, A., Finoguenov, A., Brunner, H., Urry, C. M., Silverman, J., Mainieri, V., Hasinger, G., Griffiths, R., Carollo, M., Hao, H., Guzzo, L., Blain, A., Calzetti, D., Carilli, C., Capak, P., Etori, S., Fabbiano, G., Impey, C., Lilly, S., Mobasher, B., Rich, M., Salvato, M., Sanders, D. B., Schinnerer, E., Scoville, N., Shopbell, P., Taylor, J. E., Taniguchi, Y., **Volonteri, M.** 2009, ApJS, 184, 158

¹Students and postdocs I mentored are highlighted in italics in the author list.

35. Implications of primordial black holes on the first stars and the origin of the super-massive black holes by Bambi, C., Spolyar, D., Dolgov, A. D., Freese, K., **Volonteri, M.**, 2009, MNRAS, 399, 1347
34. Dual black holes in merger remnants. I: linking accretion to dynamics by *Dotti, M.*, Ruszkowski, M., Paredi, L., Colpi, M., **Volonteri, M.**, Haardt, F., 2009, MNRAS, 396, 1640
33. The Chandra Deep Protocluster Survey: Ly-alpha Blobs are powered by heating, not cooling by Geach, J. E., Alexander, D. M., Lehmer, B. D., Smail, Ian, Matsuda, Y., Chapman, S. C., Scharf, C. A., Ivison, R. J., **Volonteri, M.** et al. 2009, ApJ, 700, 1
32. Gravitational waves from resolvable massive black hole binary systems and observations with Pulsar Timing Arrays by Sesana, A., Vecchio, A. & **Volonteri, M.**, 2009, MNRAS, 394, 2255
31. Massive Black Hole Binary Inspirals: Results from the LISA Parameter Estimation Taskforce by Arun et al., & **Volonteri, M.**, 2009, Classical and Quantum Gravity, 26, 094027
30. LISA detection of massive black hole binaries: imprint of seed populations and of extreme recoils by Sesana, A., **Volonteri, M.** & Haardt, F., 2009, Classical and Quantum Gravity, 26, 094033
29. Formation of the first nuclear clusters and massive black holes at high redshift by *Devecchi, B.* & **Volonteri, M.**, 2009, ApJ, 694, 302
28. Double quasars: probes of black hole evolution and merger scenarios by *Foreman, G.*, **Volonteri, M.** & *Dotti, M.* 2009, ApJ, 693, 1554
27. Imprints of recoiling massive black holes on the hot gas of early-type galaxies by *Devecchi, B.*, Rasia, E., *Dotti, M.*, Colpi, M. & **Volonteri, M.**, 2009, MNRAS, 394, 633
26. The Chandra Deep Protocluster Survey: Evidence for an Enhancement of AGN Activity in the SSA22 Protocluster at $z = 3.09$ by Lehmer, B.D., Alexander, D. M., Geach, J. E., Smail, I. Basu-Zych, A., Bauer, F. E., Chapman, S.C., Matsuda, Y., Scharf, C. A., **Volonteri, M.** & Yamada T., 2009, ApJ, 691, 687
25. Off-nuclear AGN as a signature of recoiling massive black holes by **Volonteri, M.** & Madau, P. 2008, ApJL, 687, 57
24. Cosmological black hole spin evolution by mergers and accretion by Berti, E. & **Volonteri, M.**, 2008, ApJ, 684, 822
23. Compact massive objects in Virgo galaxies: the black hole population by **Volonteri, M.**, Haardt, F. & Gültekin, K. 2008, MNRAS, 384, 1387

22. The evolution of massive black hole seeds by **Volonteri, M.**, Lodato, G., & Natarajan, P. 2008, MNRAS, 383, 1079
21. Black hole spin and galactic morphology by **Volonteri, M.**, Sikora, M., & Lasota, J.-P. 2007, ApJ, 667, 704
20. Gravitational recoil: signatures on the massive black hole population by **Volonteri, M.** 2007, ApJL, 663, 5
19. The imprint of massive black hole formation models on the LISA data stream by Sesana, A., **Volonteri, M.** & Haardt, F., 2007, MNRAS, 377, 1711
18. On the dynamical formation of accreting intermediate mass black holes by Kuranov, A. G., Popov, S. B., Postnov, K. A., **Volonteri, M.**, & Perna, R., 2007, MNRAS, 377, 835
17. The importance of dry and wet merging on the formation and evolution of elliptical galaxies by Ciotti, L., Lanzoni, B. & **Volonteri, M.** 2007, ApJ, 658, 65
16. Modelling active galactic nuclei: ongoing problems for the faint-end of the luminosity function by *Marulli, F.*, Branchini, E., Moscardini, L' & **Volonteri, M.** 2007, MNRAS, 375, 649
15. Unresolved X-ray background: clues on galactic nuclear activity at $z > 6$ by Salvaterra, R., Haardt, F. & **Volonteri, M.** 2007, MNRAS, 374, 761
14. Constraints on the accretion history of massive black holes from faint X-ray counts by **Volonteri, M.**, Salvaterra, R. & Haardt, F. 2006, MNRAS, 373, 121
13. Quasars at $z=6$: the survival of the fittest by **Volonteri, M.** & Rees, M. J. 2006, ApJ, 650, 669
12. Formation of supermassive black holes by direct collapse in protogalactic Nuclei by Begelman, M. C., **Volonteri, M.** & Rees, M. J. 2006, MNRAS, 370, 289
11. Modelling the quasi-stellar object luminosity and spatial clustering at low redshifts by *Marulli, F.*, Crociani, D., **Volonteri, M.**, Branchini, E., & Moscardini, L. 2006, MNRAS, 368, 1269
10. Rapid growth of high redshift black holes, by **Volonteri, M.** & Rees, M. J. 2005, ApJ, 633, 624
9. Dynamical evolution of intermediate mass black holes and their observable signatures in the nearby universe by **Volonteri, M.** & Perna, R. 2005, MNRAS, 358, 913
8. The gravitational wave signal from massive black hole binaries and its contribution to the LISA data stream by *Sesana, A.*, Haardt, F., Madau, P. & **Volonteri, M.** 2005, ApJ, 623, 23

7. The distribution and cosmic evolution of massive black hole spins, by **Volonteri, M.**, Madau, P., Quataert, E. & Rees, M. J. 2005, ApJ, 620, 69
6. Low-frequency gravitational radiation from coalescing black hole binaries in hierarchical cosmologies by *Sesana, A.*, Haardt, F., Madau, P. & **Volonteri, M.** 2004, ApJ, 611, 623
5. Early reionization by miniquasars by Madau, P., Rees, M. J., **Volonteri, M.**, Haardt, F., & Oh, P. 2004, ApJ, 604, 484
4. The formation of galaxy stellar cores by the hierarchical merging of supermassive black holes by **Volonteri, M.**, Madau, P., Haardt, F., 2003, ApJ, 593, 661
3. The assembly and merging history of supermassive black holes in Hierarchical Models of Galaxy Formation by **Volonteri, M.**, Haardt, F., Madau, P., 2003, ApJ, 582, 559
2. Interpreting the optical data of the Hubble Deep Field South: colors, morphological number counts and photometric redshifts by **Volonteri, M.**, Saracco, P., Chincarini, G., Bolzonella, M. 2000 A&A, 362, 487
1. A catalogue of galaxies in the HDF-south: photometry and structural parameters by **Volonteri, M.**, Saracco, P., Chincarini, G., 2000 A&AS, 145, 111

Conference proceedings and invited reviews

19. The Formation and Evolution of Supermassive Black Holes by **Volonteri, M.**, 2010 in preparation, Invited review for “The Astronomy and Astrophysics Review”
18. Intermediate and massive black hole binaries and seeds of galaxy formation by Barack L.; Gair, J; Mandel I. & **Volonteri M.**, 2009, Invited Review for “General Relativity and Gravitation”
17. Early evolution of massive black holes by **Volonteri, M.**; 2010, in Proc. IAU Symposium 267 “Co-evolution of central black holes and galaxies: feeding and feedback”
16. Massive black holes and their hosts by **Volonteri, M.**; Callegari, S.; Colpi, M.; Dotti, M.; Mayer, L., 2008, Memorie della Societa Astronomica Italiana, v.79, p.1231 (2008)
15. The Origins and the Early Evolution of Quasars and Supermassive Black Holes by Djorgovski, S. G., **Volonteri, M.** et al. 2008 in Proc. XI Marcel Grossmann Meeting on General Relativity
14. Growth and implications of black holes at $z > 6$ by **Volonteri, M.** & Rees, M. II Nuovo Cimento B, vol. 122, Issue 9, p.1171-1181
13. Evolution of massive black holes by **Volonteri, M.** 2007, in Proc. of the Conference “2007 STScI Spring Symposium: Black Holes”

12. Massive black holes: formation and evolution by Rees, M. & **Volonteri, M.** 2007, in Proc. of the IAU symposium “Black holes from stars to galaxies”
11. On the dynamic formation of accreting intermediate-mass black holes by Kuranov, A. G., Popov, S. B., Postnov, K. A., **Volonteri, M.**, & Perna, R., 2007, *Astronomical and Astrophysical Transactions*, vol. 26, Issue 1, p.87-89
10. Supermassive black hole mergers and cosmological structure formation by **Volonteri, M.**, 2006, 6th International LISA Symposium. AIP Conference Proceedings
9. Evolution of supermassive black holes by **Volonteri, M.**, 2006 in Proc. of the Conference “Relativistic Astrophysics and Cosmology - Einstein’s Legacy”
8. Cosmological evolution of massive black holes by **Volonteri, M.**, 2006, Proceedings of the 15th SIGRAV Conference on General Relativity and Gravitational Physics
7. Gravitational Waves from Massive Black Holes Binaries by Sesana, A., Haardt, F., Madau, P. & **Volonteri, M.** Proceedings of the MPA/ESO/MPE/USM Joint Astronomy Conference
6. The Merging History of Massive Black Holes by **Volonteri, M.** Haardt, F., Madau, P. & Sesana, A. Proceedings of the “Multiwavelength Cosmology” conference
5. Gravitational Interactions of Binary and Triple Black Holes by **Volonteri, M.** & Madau, P. 2003, in Proc. of the Conference on “The Astrophysics of Gravitational Wave Sources”, University of Maryland, ed. J. Centrella, AIP
4. The Merging History of Binary Supermassive Black Holes by **Volonteri, M.** Haardt, F. & Madau, P. 2003, Proceedings of the Conference “Galaxy Evolution: Theory & Observations”
3. Hierarchical build-up of massive black holes by **Volonteri, M.**, Madau, P. 2003 in Proc. of the Conference on “The Astrophysics of Gravitational Wave Sources”, University of Maryland, ed. J. Centrella, AIP
2. The Evolution of Binary SMBHs Population in Hierarchical Clustering Cosmologies by **Volonteri, M.**, Haardt, F., Madau, P. 2002, A New Era in Cosmology, ASP Conference Proceedings
1. Modelling the merging history of Binary SMBHS in Hierarchical Models of Galaxy Formation by **Volonteri, M.**, Haardt, F., Madau, P. 2001 in Proc. of the Conference on *The Evolution of Galaxies - Basic Building Blocks*, Ap&SS, 281, 501