

Curriculum Vitae
Francesca Matteucci



Family name, First name: Matteucci, Francesca

Researcher unique identifier ORCHID: 0000-0001-7067-2302

Date of birth: 06/02/1953

Nationality: Italian

URL for web site: <https://df.units.it/en/department/people/matteucci-maria-francesca/1331>

- **EDUCATION**

1976 Laurea cum laude in Physics
 Faculty of Mathematical, Physical and Natural Sciences / Department of Physics, University
 La Sapienza, Roma/ Italy

- **CURRENT POSITION(S)**

2000 - 2022 Current Position: **Full Professor**
 Department of Physics/ University of Trieste/ Italy and
 associated to INAF (Italian National Institute for Astrophysics) and to
 INFN (Italian National Institute for Nuclear Physics)

- **PREVIOUS POSITIONS**

1994 - 2000 Position held : Associate Professor
 Faculty of Mathematical, Physical and Natural Sciences/ Department of Astronomy/
 University of Trieste/ Italy

1992 - 1994 Position held: Research Associate at European Southern Observatory (E.S.O.) /Germany

1988 - 1992 Position held: Visitor Scientist at the Max-Planck Institut fuer Astrophysik (MPA),
 Garching bei Muenchen/Germany

1984 - 1988 Position held: E.S.O. Fellow/Germany

1982 - 1984 Position held: Post-doctoral researcher position at the Istituto di Astrofisica Spaziale
 (Italian National Council of Researches)/Frascati/Italy

1978 - 1982 Position held: Post Doctoral Fellowship from Italian National Council of Research
 (C.N.R.) /University of Padova/ Department of Astronomy/Padova/Italy

- **ACADEMIC MEMBERSHIPS**

2003 Member of the Italian **Accademia dei Lincei** for the sector of Mathematical, Physical and
 Natural Sciences/Roma, Italy

2013 Member of the **Istituto Veneto for Sciences, Letters and Arts**/Venice, Italy

- **SUPERVISION OF GRADUATE STUDENTS AND POSTDOCTORAL FELLOWS**

1994 - 2022 **8** Postdocs/ **24** PhD (4 from foreign universities)/ **25** Master Students/

• **TEACHING ACTIVITIES**

- 1994 - 2000 Associate professor– *Stellar Physics* for undergraduate students/University of Trieste/
Italy
- 2000 - 2022 Full professor– *Theoretical Astrophysics, Evolution of stars and galaxies*, and
Introduction to Astrophysics, for undergraduate students/University of
Trieste/ Italy
- 1994 – 2022 PhD courses on “*Stellar Nucleosynthesis and Chemical Evolution of Galaxies*”/Trieste
University/Italy
- 2004 Lectures at the XIII Canarie Winter School on “Chemical Evolution of Galaxies and
Intracluster Medium”, Cambridge Univ. Press
- 2004 Lectures on “Chemical Evolution of Galaxies and Galaxy Formation Mechanisms” at PhD
School on “Baryons in Dark Matter Halos”, Novigrad, Croatia 5-9 October, 2004
- 2008 Lectures at the XVI Canarie Winter Scholl on “Chemical Evolution”, Cambridge Univ.
Press
- 2008 Lectures on “Chemical Evolution of the Milky Way and Its Satellites”, Saas-Fee School,
Springer Verlag
- 2012 Lectures at NAT Lectures in Astrophysics, by the title “Collapsing and
Colliding Systems:solving the galactic puzzle”, on “Chemical Evolution of Galaxies”, San
Paolo, Brasil, February 2012

• **ORGANISATION AND EDITING OF SCIENTIFIC MEETINGS**

- 1985 -“Production and Distribution of CNO Element”/
edited by I.J. Danziger, F. Matteucci and K. Kjar. / Munich, Germany
- 1987 -“Stellar Evolution and Dynamics in the Outer Halo of the Galaxy”/
edited by M. Azzopardi, F. Matteucci and K. Kjar./Munich, Germany
- 1991 -“Chemical and Dynamical evolution of galaxie”,
edited by F.Ferrini, J.Franco and F. Matteucci, Casa Editrice ETS, Pisa/Elba Island, Italy
- 2000 -“The Chemical Evolution of our Galaxy: Stars versus Clusters”/edited by F. Giovannelli
and F. Matteucci, Astrophysics and Space Science/Kluwer:Dordrecht/Held in Vulcano,
Sicily/ Italy
- 2002 -“Chemical Enrichment of Intracluster and Intergalactic Medium”/ edited by R. Fusco-F
and F. Matteucci/ASP Conference Proceedings Vol. 253,San Francisco: Astronomical
Society of the Pacific/held in Vulcano, Sicily/Italy
- 2011 -“Chemical Evolution of Galaxies hosting GRBs” /Eds. F.Matteucci and F. Longo Sesto, Val
Pusteria, Italy/ electronic-proceedings
- 2012 -“Chemical evolution of the Milky Way” /Eds. F. Matteucci and C. Morossi/electronic
proceedings\ Sesto, Val Pusteria, Italy
- 2014 -“Chemical and dynamical evolution of the Galactic bulge”/ Eds. F. Matteucci and C.
Morossi,/electronic proceedings/ Sesto, Val Pusteria/Italy
- 2015 -“Chemical and dynamical evolution of the Milky Way and Local Group Galaxies”/ Eds. F.
Matteucci and C. Morossi/electronic proceedings/Sesto, Val Pusteria/ Italy
- 2016 -“Galactic Surveys:New Results on Formation, Evolution, Structure of the Milky Way”
Eds. F. Matteucci and C. Morossi,/electronic proceedings/ Sesto, Val Pusteria/Italy
- 2017 -“Beyond the Solar Neighbourhood: entering the Gaia Era”/ Eds. F. Matteucci and C.
Morossi/electronic proceedings/ Sesto, Val Pusteria/Italy
- 2018 - “Chemical and Dynamical Evolution of Galaxiea”/Eds. F. Matteucci and C. Morossi/electronic
proceedings/ Sesto, Val Pusteria/Italy
- 2018 - “Clues on GRB origins from chemical evolution models”/Eds. F.Matteucci and F.
Longo/electronic proceedings/ Sesto, Val Pusteria/Italy
- 2019 - “Galactic Archaeology in the Gaia Era”/Eds. F. Matteucci and C. Morossi/electronic
proceedings/ Sesto, Val Pusteria/Italy
- 2020 - “Chemical evolution of Galaxies: the next 25 years” in honor of Andy Mc William,/Eds. F.
Matteucci and C. Morossi/electronic proceedings/ Sesto, Val Pusteria/Italy

2022 - "Abundance Gradients to trace galaxy formation and evolution", /Eds. F. Matteucci and G. Cescutti and G.Bono/electronic proceedings/ Sesto, Val Pusteria/Italy

- **INSTITUTIONAL RESPONSIBILITIES**

1994 - 2022 Faculty member/University of Trieste/ Department of Physics/ Italy
1994 - 2022 Graduate and PhD Student Advisor/University of Trieste/ Department of Physics/ Italy
2003 - 2006 Head of the Astronomy Department of Trieste University/Italy
2000 - 2003 Chair of the Physics PhD Committee/University of Trieste/ Department of Physics/ Italy

- **COMMISSIONS OF TRUST**

1994 Review panel member for time allocation at Space Telescope/STSci, Baltimore/USA
1999-2000 Review panel member for time allocation at the Italian national telescope "Galileo"/ La Palma, Canarie/ Spain
2000 - 2002 Review panel member for time allocation at E.S.O. telescopes / E.S.O./ Garching/Germany
2004 - 2006 Review panel member for time allocation at Space Telescope/STSci, Baltimore/USA
2009 Review panel member for the ERC Advanced Grant/ERC/ Bruxelles/Belgium
2011 - 2013 Review panel member for Evaluation of the Scientific Research at the University of Trieste (C.V.R.)/Italy
2011 - 2013 Review panel member for the evaluation of research in Physical Sciences (ANVUR)/ Italian Ministry for Education, University and Research (MIUR)/Italy
2015 - 2017 Review panel member for the evaluation of research in Physical Sciences (ANVUR)/ Italian Ministry for Education, University and Research (MIUR)/Italy
2011 - 2015 **President of the Scientific Council** of the Italian National Institute for Astrophysics (I.N.A.F.)/ Italy
2014 - 2017 Member of the Technical and Scientific Council of Italian Space Agency (A.S.I.)/ Italy
2017 - 2022 **Editor in Chief** of Astronomy & Astrophysics Ann. Rev. /Springer-Verlag/Berlin/ Germany
1996 - 2000 Editorial Board member for Fundamental of Cosmic Physics/ USA

- **MEMBERSHIPS OF SCIENTIFIC SOCIETIES**

1986 - 2022 Member of the I.A.U.
1991 - 2022 Founding Member of of the European Astronomical Society

- **PUBLICATION RECORD**

1981 - 2022 **562** publications: **298** on refereed journal and **264** in Conference Proceedings
18640 citations until April 2022, **143** publication as first author
hindex=74 (total Hirsch index)
(hindex)_p=29 (Hirsch index for first author)

She is in the list of the Stanford University including the World's Top 2% Scientists

- **MAJOR COLLABORATIONS**

Prof. Roberto Maiolino, Chemical evolution of galaxies/Kavli Institute for Cosmology c/o Institute of Astronomy/Madingley Road, Cambridge CB3 0HA / U.K.
Dr. Cristina Chiappini, Chemical Evolution of the Milky Way/Leibniz Institute fuer Astrophysik/Potsdam/Germany
Dr. P. de Laverny & A. Recjo-Blanco, AMBRE project/Observatoire de Cote d'Azur/Nice/France
Dr. M. R. Rich, Galactic bulge/ U.C.L.A., Los Angeles, California/USA
Dr. Nils Ryde, Galactic bulge and Galactic centre/ Lund Observatory/Sweden
Dr. Mathias Schultheis, Galactic bulge/Observatoire de Cote d'Azur/Nice/France
Prof. Raffaella Schneider, Dust in the early Universe/University La Sapienza/ Roma, Italy
Dr. Donatella Romano, Evolution of CNO isotopes in galaxies & Dr. Francesco Calura,

Section c: Ten years track-record

In the last 10 years Francesca Matteucci has been author of 176 papers, of which 106 are on Journals with Peer Review . The main topics of her research in these last 10 years have focused on the chemical evolution of the Milky Way and external galaxies, as well as on the identification of high redshift objects by means of their abundance patterns. Concerning the chemical evolution of the Milky Way, particular attention was payed to the evolution of very heavy elements, such as Eu, produced in merging of compact objects and supernovae. She also devoted time to study cosmic chemical evolution, namely to the evolution in a unitary volume of the Universe. To do that, with her collaborators she has developed very detailed models of chemical evolution including the evolution of dust for galaxies of different morphological type, and these models represent, at the moment, the state- of- the- art in this field. In the following are reported 10 representative publications in the last 10 years:

- 1) Cescutti, G., **Matteucci, F.**, 2011, "Galactic astroarchaeology: reconstructing the bulge history by means of the newest data", A&A, 525, 126
- 2) Spitoni, E. , **Matteucci, F.**, 2011, "Effects of the radial flows on the chemical evolution of the Milky Way disk", A&A, 531,72
- 3) Vincoletto, L., **Matteucci, F.**, Calura, F., Silva, L., Granato, G., 2012, "Cosmic star formation rate: a theoretical approach", MNRAS, 421, 3116
- 5) Micali, A., **Matteucci, F.**, Romano, D., 2013, "The chemical evolution of the Milky Way: the Three Infall Model", MNRAS, 436, 1648
- 6) Zhang, Z.Y., Romano, D., Ivison, R.J., Papadopoulos, P.P., **Matteucci, F.**, 2015, "Stellar Populations dominated by massive stars in dusty starburst galaxies across cosmic time", Nature, 558, 260
- 7) **Matteucci, F.**, Romano, D., Arcones, A., Korobkin, O., Rosswog, S., 2014, "Europium production: neutron star mergers versus core-collapse supernovae", MNRAS, 438, 2177
- 8) Gioannini, L., **Matteucci, F.**, Vladilo, G., Calura, 2017, "A new galactic chemical evolution model with dust: results for dwarf irregular galaxies and DLA systems", MNRAS, 464, 985
- 9) **Matteucci, F.**, Grisoni, V., 2019, "The origin of stellar populations in the Galactic bulge from chemical abundances", MNRAS, 487, 5363
- 10) **Matteucci, F.**, 2021, "Modelling the Chemical Evolution of the Milky Way", A&ARev, 29, 5

Monographs:

- 1) "The Chemical Evolution of the Galaxy", 2001, by **F. Matteucci**, Astrophysics and Space Science Library, Kluwer Academic Publishers pp.293

2) “Chemical Evolution of Galaxies”, 2012, by **F. Matteucci**, Astronomy and Astrophysics Library, Springer, pp. 220

and 1/3 of the monograph:

3) “The Origin of the Galaxy and Local Group” , 2014, by J. Bland-Hawthorn, K. Freeman and **F. Matteucci**, Saas-Fee Advanced Course 37, Swiss Society for Astrophysics and Astronomy, Springer, pp. 145-222

Francesca Matteucci has delivered more than 40 invited presentations to internationally established conferences and international advanced schools during her entire career. Reported here are some of them belonging to the last ten years:

F. Matteucci, 2016, “Introduction to Galactic Chemical Evolution”, Journal of Physics: Conference Series, Volume 703, Issue 1, article id. 012004

F. Matteucci, G. Grieco, 2015, “Galactic chemical evolution and GRB host identification”, Astronomy in Focus, as presented at the IAU XXIX General Assembly, 2015. Proceedings of the IAU, Volume 29B, 2016, pp. 255-256

F. Matteucci, 2013, “Chemical Evolution of Dwarf Galaxies”, From Dwarfs to Giants: Mike Irwin's travels in the Local Group and beyond, a conference held 29 July - 3 August, 2013, in Sexten, Italy. Online at: <http://www.sexten-cfa.eu/images/stories/conferenze2013/Dwarfs/Sesto-schedule-final.pdf>

F. Matteucci, 2013 , “Cosmic chemical evolution near and far”, GRBs and their Hosts as Tracers of the High Redshift Universe, a conference held 21-25 January, 2013 in Sexten, Italy. Online at: <http://www.sexten-cfa.eu/en/pprogramredshift>, id.24

F. Matteucci, 2010, “The effect of different Type Ia SN progenitors on galactic chemical enrichment”, Progenitors and Environments of Stellar Explosions, XXVIth IAP Annual Colloquium held in Paris 28 June - 2July, 2010. Online at http://www.iap.fr/col2010/scientific_programme.html, id.63

F. Matteucci, 2010, “Chemical Enrichment in Galaxies: Constraints on Nucleogenesis and Galaxy Evolution”, Galaxies and their Masks, by Block, David L.; Freeman, Kenneth C.; Puerari, Ivânio, ISBN 978-1-4419-7316-0. Springer Science+Business Media, LLC, 2010, p. 261

F. Matteucci, 2009, “The chemical evolution of the Milky Way and dwarf spheroidals of the Local Group”, Memorie della Società Astronomica Italiana, v.80, p.83

F. Matteucci, 2008, “The Role of Massive Stars in Galactic Chemical Evolution”, Massive Stars as Cosmic Engines, Proceedings of the International Astronomical Union, IAU Symposium, Volume 250, p. 391-400

- *The major contributions to the careers of excellent researchers can be summarized as follows: during her career, Francesca Matteucci has supervised 25 PhD students and some of them are quite successful now, like **Emanuela Pompei** (E.S.O.), **Cristina Chiappini** (Leibnitz Institute, Potsdam) and **B.K. Gibson** (University of Hull), **Gustavo Lanfranchi** (University of Sao Paulo, Brasil), **Francesco Calura** (INAF, Bologna), **Donatella Romano** (INAF, Bologna), **Xilong Fan** (University of Wuhan, China), **Gabriele Cescutti** (Trieste University) and **Emanuele Spitoni** (Observatoire de la Cote d’Azur, Nice).*

Grants as Principal Investigator:

Francesca Matteucci has been National P.I. of three large scientific national projects (PRIN) funded by the Italian Ministry of Research (MIUR), plus projects at Trieste University:

- 2003, PRIN-MIUR. Project: “Chemical and Dynamical Evolution of Galaxies: Interpretation of the Chemical Abundances in the Universe”: **100Keuro**
- 2007, PRIN-MIUR, Project: “Galactic Astroarchaeology: A Local Route to Cosmology”: **141 Keuro**
- 2011, PRIN-MIUR, Project: Chemical and Dynamical Evolution of the Milky Way and Galaxies of the Local Group”: **787,7Keuro**
- 2011, Trieste University, Project: “Cosmic Chemical Evolution, Supernovae and Gamma-Ray-Bursts”: **12Keuro**
- 2016, Trieste University, Project: “Formation and Evolution of the Milky Way: a problem of cosmic archaeology”: **10Keuro**