
Curriculum Vitae

Professor Dr. Elisa Resconi

Personal Data

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Born 1.12.1971 Brescia, Italy
Citizenship Italian
Family Married, two children (2000, 2003)

Employment

2018 – present Full Professor, Liesel Beckmann Distinguished Professorships, Technische Universität München.
2016 – 2018 Associate Professor, Technische Universität München.
2013 – 2016 Heisenberg Professor, Technische Universität München.
2012 Associated Scientist, Excellence Cluster *Universe*, Technische Universität München.
2011 Guest Professor, Universität Erlangen-Nürnberg, Germany.
2005 – 2011 Emmy-Noether Junior Research Group (DFG), MPIK, Heidelberg, Germany.
2002 – 2005 Marie Curie Postdoctoral Fellow (EU), DESY-Zeuthen, Germany.

Education

1997 – 2001 Ph.D. in Physics, University of Genoa and Laboratori Nazionali del Gran Sasso, L'Aquila, Italy.
1996 – 1997 INFN Fellowship for undergraduate students, LNGS, L'Aquila, Italy.
1995 Summer research internship, Princeton University, USA.
1994 – 1995 INFN Fellowship for master students, LNGS, L'Aquila, Italy.
1991 – 1995 M.Sc. in Physics at the University of Milano, Italy.

Research Responsibilities

- Max-Planck Fellow, Max-Planck-Institut für Physik (MPP), since 2017.
- TUM-IAS, Focus group *Multi-Messenger astrophysics and the United Nations Open Universe initiative*, since 2017.
- Spokesperson of SFB 1258 *Neutrinos and Dark Matter in Astro- and Particle Physics*, since 2016.
- INFN board of evaluation for associated professors (national competition), 2015.
- Associated Editor, *Europhysics Journal C (EPJC)*, since 2014.
- Member of the Advisory board of Reviews in Physics, since 2014.
- Member of the Scientific Advisory Committee of KM3NeT, since 2013.
- Elected representative of the Committee for Astroparticle Physics in Germany (KAT), area high-energy neutrinos, since 2013.
- Coordinator of the ASPERA (EU) network, *A Concerted R&D Program for Low Energy Neutrino Detectors (LOWE)*, 2012-2015.
- Head of the research area *Experimental Physics with Cosmic Particles*, TUM, since 2011.

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- The IceCube South Pole Neutrino Telescope, institutional board representative for MPIK-Heidelberg 2005-2010; institutional board representative for TUM since 2011; data analysis coordinator (2008-2011); chair of the Speakers Committee since 2015; member of the Executive Committee, since 2017.

Prizes / Awards

- Heinz Maier-Leibnitz-Medaille, 2017.
- Max-Planck Fellow, 2017.
- Heisenberg Professorship, 2012.
- Emmy-Noether Junior Research Group, 2005.
- Marie Curie Individual Fellowship, 2002.

Publication summary (refereed only) ¹

- Total number of papers: 178
- Total number of citations: 16593
- Average citation per paper: 93.2
- h-index: 75

Books

- T. K. Gaisser, R. Engel, E. Resconi, *Cosmic Rays and Particle Physics*, Cambridge University Press, 2016.
- E. Resconi, F. A. Aharonian, *High-Energy Gamma-rays and Neutrinos from Extra-Galactic Sources*. International Journal of Modern Physics D, Vol 18, Nr 10, October 2009.

Reviewing and editorial work

- Referee for journal: Nature, EPJ C, JCAP, Phys. Rev. D., Astroparticle Physics Journal.
- Referee for funding agencies: Agence Nationale de la Recherche, Swiss National Science Foundation, Ministero dell'Istruzione, dell'Università della Ricerca Italiana, Danish Council for Independent Research Natural Sciences, Deutsche Forschungsgemeinschaft (DFG), German-Israeli Foundation for Scientific Research and Development.
- Referee for Alexander von Humboldt-Stiftung.

¹From https://inspirehep.net/search?ln=en&p=find+a+resconi%2C+e&of=hb&action_search=Search&sf=earliestdate&so=d

Organization of International Conferences and Workshops

- Perspectives in Astroparticle physics from high energy neutrinos (PAHEN), Napoli 2018.
- Topical workshop, The High Energy Universe: Gamma Ray, Neutrino, and Cosmic Ray Astronomy, Munich Institute for Astro and Particle Physics, Garching 2018.
- TAUP 2017 – XV International Conference on Topics in Astroparticle and Underground Physics, SNO Lab (Canada) 2017.
- Atmospheric Neutrino Workshop (ANW'16), Garching 2016.
- Interdisciplinary Workshop, Evaluation of likelihood functions on GPUs, Garching 2014.
- Topical workshop, Neutrinos in Astro- and Particle Physics, Munich Institute for Astro and Particle Physics, Garching, 2014.
- Wilhelm and Else Heraeus Seminar, Exploring the neutrino sky and fundamental particle physics on the Megaton scale, Bad Honnef, 2013.
- 13th International Conference on Topics in Astroparticle and Underground Physics 2013, Co-convenor of the session Atmospheric neutrinos, Asilomar, California USA, 2013.
- IceCube Particle Astrophysics (IPA) Symposium, 2013, Madison, USA.
- Mediterranean and Antarctica Neutrino Telescope Symposium (MANTS), Garching, 2013.
- TeV Particle Astrophysics 2010, Paris, France, 2010.
- High-Energy Gamma-rays and Neutrinos from Extra-Galactic Sources, 2nd Heidelberg, Workshop, MPIK, 2009.
- Non Thermal Hadronic Processes in Galactic Sources, 1st Heidelberg Workshop. Max-Planck-Institute for Nuclear Physics, 2008.

Scientific plenary talks (since 2013)

- 25th Rencontres du Vietnam, Quy Nhon (Vietnam), 2018.
- Fifteenth Marcel Grossmann Meeting - MG15, Rome (Italy), 2018.
- AMS DAYS at La Palma - The Future of Cosmic Rays, La Palma (Spain) 2018.
- Perspectives in Astroparticle physics from High Energy Neutrinos, Napoli (Italy), 2017.
- 35th International Cosmic Ray Conference 2017 (ICRC2017), Busan (Korea), 2017.
- Invisibles17 Workshop, Zurich (Switzerland), 2017.
- The Lake Baikal Three Messenger Conference, Listvyanka at Lake Baikal (Russia), 2016.
- Gamma 2016 international conference, Heidelberg (Germany), 2016.
- Active Galactic Nuclei: what's in a name?, ESO, Garching (Germany), 2016.
- DPG'16, Hamburg (Germany), 2016.
- Symmetries and Phases in the Universe, Irsee (Germany), 2015.
- International Conference on Massive Neutrinos, Nanyang Technology University, Singapore (Singapore), 2015.
- XLV International Symposium on Multiparticle Dynamics, Wildbad Kreuth (Germany), 2015.
- 52. International Winter Meeting on Nuclear Physics, Bormio (Italy), 2014.
- NuPhys2014: Prospects in Neutrino Physics, London (U.K.), 2014.
- Astroparticle Physics Conference (TeVPa/iDM), Amsterdam (The Netherlands), 2014.
- Neutrino Oscillation Workshop, Conca Specchiulla, Otranto, (Italy), 2014.
- Aspen Winter Workshop, New Directions in Neutrino Physics, Aspen (Colorado, USA), 2013.
- 2013 European Physical Society Conference on High Energy Physics (EPS-HEP), Cosmic rays and Neutrinos, Stockholm (Sweden), 2013.

Colloquia (since 2013)

- Università degli Studi di Pisa (Italy), 2018.
- University of Copenhagen, Niels Bohr Institute, Copenhagen (DK), 2017.
- TRIUMF particle accelerator centre, Vancouver (Canada), 2017.
- Bad Honnef, 2016.
- TUM-IAS Garching, 2016.
- Universität Heidelberg, Physics Colloquium, 2015.
- Nicolaus Copernicus Planetarium Nürnberg, 2015.
- Max Planck for Particle Physics, Physics Colloquium, Munich, 2015.
- MLL Colloquium, Physik LMU, Garching, 2014.
- FRM II Colloquium, Neutrons in Science and Industry, Garching, 2014.
- Physikalisches Kolloquium, Universität Regensburg, Regensburg, 2014.
- SFB Colloquium, DESY-Hamburg, 2014.
- Schuster Colloquium, School of Physics and Astronomy, The University of Manchester, 2014.
- Science week, cluster of excellence *Universe*, report of Area C, Garching, 2014.
- Colloquium, HADES General Meeting, IAS Garching, 2014.
- Colloquium, Max-Planck-Institut für Plasmaphysik, Garching, 2014.
- Kosmische Teilchen: Lesen von unsichtbaren Schriften, KIT, Karlsruhe, 2014.
- Joint Astronomy Colloquium, ESO, Garching, 2013.

Teaching and supervision

- Lecture in “Cosmic Rays and Particle Physics”, “Experimental physics I, II for teachers”, “Data analysis tools in particle and astroparticle physics”, “Neutrino Astronomy”, and Mentoring Program since 2012.
- Lecture at the ISAPP 2017 International School on Astroparticle, 2017.
- Lecture at the 14th Russbach School on Nuclear Astrophysics, 2017.
- Lecture at VI Pontecorvo neutrino physics school, High Tatra Mountains, Slovakia, 2015.
- Lecture at International School of AstroParticle Physics, APC, Paris, 2012.
- Lecture in “Neutrino Astronomy”, Universität Erlangen-Nürnberg, 2011.
- Lecture at “Schule für Astroteilchenphysik”, Universität Erlangen-Nürnberg, 2009.
- Special lecture on “Particle Astrophysics”, Universität Heidelberg, 2008.
- Lectures at the Joint Dutch Belgian German Graduate School, Bad Honnef, 2006.
- Supervisor of PhD students since 2006, 5 PhD students ongoing, 5 PhD students completed.
- Supervisor of master and bachelor students since 2006.

List of the 10 most important papers

- P. Padovani, P. Giommi, E. Resconi et al., *Dissecting the region around IceCube-170922A : the blazar TXS 0506+056 as the first cosmic neutrino source*, Mon.Not.Roy.Astron.Soc., 480 (2018) 192.
- IceCube Collaboration (M.G. Aartsen et al.), *Neutrino emission from the direction of the blazar TXS 0506+056 prior to the IceCube-170922A alert*, Science 361 (2018) no.6398, 147-151.
- E. Resconi, et al., *Connecting blazars with ultra high energy cosmic rays and astrophysical neutrinos*, Mon.Not.Roy.Astron.Soc., 468 (2017) 1, 11.
- E. Resconi, *Fundamental Physics with Cosmic Particles*, Annalen der Physik (Berlin), 2015.
- IceCube Collaboration (M.G. Aartsen et al.), *Searches for small-scale anisotropies from neutrino point sources with three years of IceCube data*, Astropart.Phys. 66 (2015) 39-52.

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- P. Padovani, E. Resconi, *Are both BL Lacs and pulsar wind nebulae the astrophysical counterparts of IceCube neutrino events?*, Mon.Not.Roy.Astron.Soc. 443 (2014) 1, 474- 484.
 - IceCube Collaboration (M.G. Aartsen et al.), *Observation of High-Energy Astrophysical Neutrinos in Three Years of IceCube Data*, Phys.Rev.Lett. 113 (2014) 101101.
 - IceCube Collaboration (M.G. Aartsen et al.), *Measurement of Atmospheric Neutrino Oscillations with IceCube*, Phys.Rev.Lett. 111 (2013) 8, 081801.
 - IceCube Collaboration (M.G. Aartsen et al.), *Evidence for High-Energy Extraterrestrial Neutrinos at the IceCube Detector*, Science 342 (2013) 1242856.
 - S. Schönert, T. K. Gaisser, E. Resconi, O. Schulz, *Vetoing atmospheric neutrinos in a high energy neutrino telescope*, Phys.Rev. D79 (2009) 043009.

Granted patents

PCT/EP2005/003200, Owner: DESY, Inventor: E. Resconi; Title of the patent: *Wavelength shifter, method for its production and photomultiplier incorporating a wavelength shifter*. April 2008, Granted from European Patent Office.

Major Academic Achievements

- Published the first evidence of an association between a known blazar and an excess of high energy neutrinos.
- Published first association between extreme blazars, high energy neutrinos, and ultra-high energy cosmic rays based on novel methods as the neutrino-filter technique.
- Contributed to the discovery of high-energy astrophysical neutrinos with the IceCube Neutrino Telescope through the development of novel methods as the self-vetoing neutrino technique.
- Published state of the art point source searches with the IceCube Neutrino Telescope based on likelihood and stacking approaches.
- Co-authored a book on cosmic rays physics.
- Developed new calibration sources for the study of the optical properties of the deep South Pole ice and water sites.
- Published the first observation of atmospheric neutrino oscillation at high energy in a large volume neutrino telescope (DeepCore).
- Designed new neutrino telescope concepts for the atmospheric neutrino oscillation (DeepCore), the measurement of the neutrino mass hierarchy (PINGU), and for high energy neutrino astronomy (IceCube-Gen2).
- Patented a wavelength shifter foil production technique for optical sensors.