

# MIGUEL ONORATO

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## PERSONAL DATA

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*Name:* Miguel

*Surname:* Onorato

*Date of Birth:* 1 June 1970

*Place of birth:* Torino (Italy)

*Citizenship:* Italian

## ACADEMIC APPOINTMENTS

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*2019-present* Full Professor, Dipartimento di Fisica, Università di Torino

*2015-2019* Associate Professor, Dipartimento di Fisica, Università di Torino

*2016* Visiting Professor (one month), Université Pierre et Marie Curie, Paris, France

*2014-2016* Visiting Professor (one month per year), Lille University of Science and Technology, Lille, France

*2010* Visiting Professor (one month), Swinburne University of Technology, Australia

*2009-2012* Guest Professor, Katholieke Universiteit Leuven, Belgium

*2004-2015* Ricercatore (Assistant Professor), Dipartimento di Fisica Generale, Università di Torino

## EDUCATION

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*February 2000* Ph.D. in Fluid Mechanics - Politecnico di Torino

*October 1994* Laurea in Fisica - Università degli Studi di Torino

## RESEARCH FELLOWSHIPS

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*2002-2004* “Assegno di Ricerca” in the Dipartimento di Fisica Generale, Università di Torino

*2000-2002* “Contratto di Collaborazione Coordinata e Continuativa” in the Dipartimento di Fisica Generale, Università di Torino

*1995-1996* fellowship at C.N.R (Centro Nazionale della Ricerca) c/o University of Pisa

*1993 (June-August)* Von Karman Institute fellowship, Bruxelles (Belgium)

## SUMMARY OF SCIENTIFIC ACTIVITIES AND PRODUCTS

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M. Onorato is a world's leading expert in the field of nonlinear ocean waves and wave turbulence. He has given important contributions, both theoretically and experimentally, to the understanding of the statistical properties of surface gravity waves, with particular interest on extreme events. More recently, he started working on the dynamics of waves propagating on ice. In July 2017 he participated to the expedition to marginal ice zone of Antartica on board of the SA Agulhas II research vessel and published a number of papers on the subject. His scientific products can be summarized as follows:

Number of published papers in international journals: 125

among which 16 papers in Physical Review Letters (I.F. 8.8), 2 papers in P.N.A.S (I.F. 9.5), 2 papers in Physical Review X (I.F. 14.4), 1 paper in Physics Reports (I.F. 20.0), 1 paper in Scientific Reports

H-index: 47 (Google Scholar), 40 (Scopus)

Total Number of Citations: 8037 (Google Scholar), 5599 (Scopus)

Co-Editor of the book “Rogue and Shock Waves in Nonlinear Dispersive Media” Lecture Notes in Physics, Springer

## FIVE SIGNIFICANT PUBLICATIONS

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- 1) Alberello, A., Onorato, M., Bennetts, L., Vichi, M., Eayrs, C., MacHutchon, K., Toffoli, A. (2019). Brief communication: Pancake ice floe size distribution during the winter expansion of the Antarctic marginal ice zone. *Cryosphere*, 13(1).
- 2) Vichi, M., Eayrs, C., Alberello, A., Bekker, A., Bennetts, L., Holland, D., De Jong, E., Joubert, W., MacHutchon, K., Messori, G., Mojica, J., Onorato, M., Saunders, C., Skatulla, S. and Toffoli, A. (2019). Effects of an explosive polar cyclone crossing the Antarctic marginal ice zone. *Geophysical Research Letters*, 46(11), 5948-5958.
- 3) Onorato, M., Residori, S., Bortolozzo, U., Montina, A., and Arecchi, F. T. (2013). Rogue waves and their generating mechanisms in different physical contexts. *Physics Reports*, 528(2), 47-89.
- 4) Babanin, A. V., Onorato, M., and Qiao, F. (2012). Surface waves and wave-coupled effects in lower atmosphere and upper ocean. *Journal of Geophysical Research: Oceans*, 117(C11).
- 5) Toffoli, A., Babanin, A., Onorato, M., and Waseda, T. (2010). Maximum steepness of oceanic waves: Field and laboratory experiments. *Geophysical Research Letters*, 37(5).

## GRANTS AS P.I. OR LOCAL P.I.

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*2019-2023* Simons Foundation: Wave Turbulence (Local P.I.) 465.600 €  
*2020-2024* European Commission, Future and Emerging Technologies: Bio-Inspired Hierarchical Meta-Materials (Local P.I.) 100.000 €  
*2017-2019* CSTO160004, Compagnia San Paolo/Università di Torino (P.I.): Hierarchical Metamaterials for Acoustic and Seismic Applications. 75.460 €  
*2013-2014* Consultancy contract with “Waves and Solitons L.L.C.” (P.I.): Nonlinear interactions in ocean waves. 25.000 U.S.\$  
*2013-2015* Consultancy contract with Technical University of Berlin (P.I.): PROWOO Prognose Optimaler Wetterfenster für Offshore Operationen. 17.661 €  
*2013-2017* PRIN 2012BFNWZ2004: Extreme wave events in nonlinear optics and hydrodynamics (Local P.I.). 41.000 €  
*2009-2013* FP7-SST-2008-RTD-1: Design for ship safety in extreme seas (Local P.I.). 259.512 €  
*2006-2008* Bando Programma Quadro per il Potenziamento della Ricerca Scientifica Applicata in Piemonte: Innovative Numerical Methods For Complex Microflows (P.I.). 100.000 €  
*2000-2001* Progetto Giovani Ricercatori - Università di Torino (P.I.): Predicibilità della formazione delle onde giganti sulla superficie del mare. 5.000.000 Lire  
*1999-2000* Progetto Giovani Ricercatori - Università di Torino (P.I.): Studio numerico-sperimentale di onde estreme sulla superficie del mare. 16.000.000 Lire

## SEMINARS AND TALKS

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*2020 - 18 February* Invited talk at 4th KOZWaves conference (Australian Wave Science), Melbourne (Australia)  
*2018 - 9 September* Plenary talk at the 12th European Fluid Mechanics Conference, Vienna (Austria). The conference is the largest conference in fluid mechanics in Europe (about 900 attendees)  
*2014 - 30 May* Plenary talk at the 28th European Conference on Modelling and Simulation, Brescia (Italy)  
*2005-present* On average, two talks per year in international conferences or workshops have been given  
*2000-present* Invitation to give a one-hour seminar in many renowned institutions: M.I.T, Courant Institute, Oslo University, Dundee University, Swinburne University, Pierre et Marie Curie University,

Warwick University, Technical University of Berlin, Università di Firenze, Università di Pisa, Università di Napoli (Federico II), Università di Torino, Dublin University, University of Marseille, University of Grenoble, SISSA, Newcastle University, Université de Lille, Norwich University, Université Nice Sophia Antipolis, Tokyo University, École Normale Supérieure de Cachan.

## ORGANIZATION OF CONFERENCES AND SUMMER-SCHOOLS

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*2019 - September 3-6* Scientific Secretary of the 17th European Turbulence Conference, , Torino (Italy)  
*2011– present* Convenner of the Session “Surface Waves and Wave-Coupled Effects in Lower Atmosphere and Upper Ocean” of the European Geophysical Union  
*2006–2019* Member of the Steering Committee of the international conference “Waves in Shallow Water Environment”  
*2018* Co-organizer of the summers school “Wave Turbulence and Extreme Events”, Udine (Italy)  
*2015* Co-organizer of the workshop “Rogue waves in integrable and non-integrable models”, Cagliari (Italy)  
*2015* Co-organizer of the summers school “Rogue and Shock Waves in Nonlinear Dispersive media”, Cargese (Francia)  
*2007* Co-organizer of the summers school “Waves and Coastal Processes”, Tallin (Estonia)

## MEMBER OF PH.D EVALUATION COMMITTEES

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*2019* Ivan Redor, Université Grenoble Alpes  
*2018* Legena Hanry, The University of the West Indies, Trinidad and Tobago  
*2016* Quentin Aubourg, Université Grenoble Alpes  
*2016* Tore Magnus Taklo, Oslo University  
*2015* Leandro Fernández, University of Leuven, Belgium  
*2006* Oyvind Kristianse, University of Oslo, Norway  
*2006* Alessandro Torffoli, University of Leuven, Belgium

## EDITORIAL ACTIVITY

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*July 2017–present:* Member of the Editorial board of the Journal of Fluid Mechanics

## STUDENT SUPERVISION ACTIVITY

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Supervisor of about 50 bachelor/master thesis in Physics, 2 Ph.D. students, 6 Post Doctoral fellows

## PEER REVIEWING ACTIVITY

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*Referee for:*

Physical Review Letters, Nature Physics, P.N.A.S., Physical Review X, Physical Review E, Physical Review F, Optics Letters, Europhysics Letters, Physics Letters A, Physics of Fluids, Physica D, Nonlinearity, Journal of Fluid Mechanics, Nonlinear Processes in Geophysics, Fluid Dynamics Research, Journal of Physical Oceanography, European Journal of Mechanics B/Fluids, Journal of Geophysical Research, Geophysical Research Letters, Annals of Physics, Ocean Dynamics, Wave Motion, Journal of Physics A, Proceedings of the Royal Society of London A

*Revision of proposals for the following agencies:*

Engineering and Physical Sciences Research Council, E.P.S.R.C. (UK)  
European Science Foundation  
L’Agence Nationale de la Recherche, A.N.R. (France)  
Israel Science Foundation (Israel)  
Estonian Research Council (Estonia)  
Austrian Science Fund (FWF) (Austria)