

FABIO BENATTI

Date of birth: 20 April 1960

Present Position: Associate Professor

Institution: Department of Physics, University of Trieste, I-34151 Trieste, Italy

Education

- 1984, Master Degree in Physics: University of Trieste (Italy)
- 1988, Ph.D. in Mathematical Physics: International School for Advanced Studies (SISSA), Trieste (Italy)

Career

- 1989, Post Doc: Institute for Theoretical Physics, University of Vienna (Austria)
- 1990, Post Doc: Dublin Institute for Advanced Studies, Dublin (EIRE)
- 1990-2013, Research Staff Member, University of Trieste, Italy
- 1998, Research visitor: Institute for Theoretical Physics, University of Leuven Belgium
- 2014-present, Associate professor: University of Trieste (Italy)

Research Interests

- Many-Body Open Quantum Systems
- Quantum Correlations in Mesoscopic Quantum Systems
- Entropy and Complexity in Quantum Dynamics

Scientific Publications

- 162 (ISI Web of Science, see <http://www-dft.ts.infn.it/~benatti>)
- Citations: 3383 (ISI Web of Science)
- H-index: 29 (ISI Web of Science)

Books

- F. Benatti: Deterministic Chaos in Infinite Quantum Systems (Trieste Notes in Physics, Springer-Verlag 1993)
- F. Benatti: Dynamics, Information and Complexity in Quantum Systems: Theoretical and Mathematical Physics, Springer-Verlag 2009
- F. Benatti: Dynamics, Information and Complexity in Quantum Systems, Theoretical and Mathematical Physics, Springer-Verlag 2023, 2nd edition

Proceedings: 11

Edited Books and Special Issues

- Irreversible Quantum Dynamics, F. Benatti, R. Floreanini eds., Lec. Notes. Phys. 622, Springer 2003
- J. Phys. A 40 (2007), Special Issue, F. Benatti, M. Fannes, R. Floreanini and D. Petritis eds.
- Quantum Information, Computation and Cryptography, F. Benatti, M. Fannes, R. Floreanini and D. Petritis eds, Lec. Notes Phys. 808, Springer 2010
- Loss of coherence and memory effects in quantum dynamics, F. Benatti, R. Floreanini and G. Scholes eds, J. Phys. B: At. Mol. Opt. Phys. 45 (2012) 150201

School and Workshop Organization

- Quantum Entropies: Dynamics and Information, SISSA, Trieste, 14-18 December 2001
- Irreversible Quantum Dynamics, ICTP, Trieste, 29 July-2 August 2002
- Kolmogorov's Legacy in Physics: One Century of Chaos, Turbulence and Complexity, ICTP, Trieste, 8-17 September 2003
- Theory and Technology in Quantum Information, Communication, Computation, Cryptography, ICTP, Trieste, 12-23 June 2006
- New Trends in Quantum Dynamics and Entanglement, ICTP, Trieste, 14-25 February 2011
- Quantum Africa Conference 3: Advances in Quantum Sciences, 22-26 September 2014, Mohammed V Agdal University, Rabat, Morocco
- Trieste Quantum Days 2017, SISSA, 20-24 February 2017, Trieste, Italy
- QUANT2018, Quantum Information, communication and computing: advances in theory and implementations, Université de Cergy-Pontoise, France, 26-28 September 2018
- School and Workshop on “Ubiquitous Quantum Mechanics”, ICTP, Trieste, 25 February- 1 March 2019.
- Italian Quantum Information Science (IQIS-2023), Trieste, 18-22 September 2023

Talks at School and Congresses

- Quantum Probability Conference, Gdansk (Poland), June 1997 (invited speaker)
- Raach Graduate Triangle School, Raach (Austria) 1999 (invited lecturer)
- Dresden Symposium on Entropy, Dresden (Germany) June 2000 (invited speaker)
- Quantum Probability Conference, God (Hungary), September 2000 (invited speaker)
- 38 Karpacz Winter School of Theoretical Physics, (Poland) February 2002 (invited speaker)
- International Congress of Mathematical Physics, Lisbon (Portugal) 27 July--2 August 2003 (invited speaker)
- School on Quantum Information and Computation, Istanbul Feza Gursey Institute, 25 August-- 5 September 2003 (invited lecturer)
- Oberwolfach Workshop on Entanglement and Decoherence: Mathematics and Physics of Quantum Information and Computation, 23-29 January 2005 (invited speaker)
- Problemi Attuali di Fisica Teorica: Vietri sul Mare, 18-24 Marzo 2005 (contributed talk)
- Natural Processes and Models of Computation: Bologna, June 16-18 2005(invited speaker)
- 14th International Laser Physics Workshop: Kyoto, July 4-8, 2005 (contributed talk)
- Advances in Foundations of Quantum Mechanics and Quantum Information with atoms and photons: Torino, 2-5 May 2006 (contributed talk)
- Caos, Complessita' ed Informazione III: 20-21 March 2006, Bologna (invited speaker)
- Aspects of Complexity: Rome, September 11-12 2006 (invited speaker)
- Metodi e Problemi Matematici in Meccanica Quantistica: Modena, 5-7 October 2006 (invited speaker)
- Noise Information & Complexity @ Quantum Scale: Erice 4-10 November 2007 (contibuted talk)
- Italian Quantum Information Science Conference: Camerino, October 24--29, 2008 (contributed talk)
- Problemi Attuali di Fisica Teorica: Vietri sul Mare, 3-8 April, 2009 (invited lecturer)
- 2009 Workshop on Information Theoretic Methods in Science and Engineering: Tampere, Finland, August 17-19, 2009 (invited speaker)
- Italian Quantum Information Science Conference 2009: Pisa, 5--8 November 2009 (contributed talk)
- 46 Karpacz Winter School of Theoretical Physics, "Quantum Dynamics and Information: Theory and Experiment", Ladek Zdroj, Poland, 8-13 February 2010 (invited talk)
- Leuven Mathematical Physics Days, 6-7 May 2010 (invited speaker)
- Quantum Channels, Quantum Information - Theory & Applications, Torun, June 19-22, 2010 (invited speaker)
- Complex Quantum Systems, IFSC Palma De Mallorca, 14-15 October 2010 (invited speaker)
- Andrejewski Day Freiburg, The mathematics of quantum transport, Friday, May 18, 2012, Albert-Ludwigs-Universitaet Freiburg (invited speaker)
- 44 Symposium on Mathematical Physics, New Developments in the Theory of Open Quantum Systems, Torun, June 20-24, 2012 (invited speaker)
- The third International Iran Conference on Quantum Information (IICQI-12), Department of Physics, Sharif University of Technology, Tehran, Iran, 8-12 September 2012 (invited speaker)
- Quantum Information meets Statistical Mechanics, September 22-25 2012, Innsbruck, Austria (invited speaker)
- Nonlinear Dynamics of Electronic Systems, July 10-12 2013, Bari, Italy (invited speaker)
- 6-th Italian Quantum Information Science Conference, 24-26 September 2013, Como Italy (invited speaker)
- 48 Symposium on Mathematical Physics: Gorini-Kossakowski-Lindblad-Sudarshan Master Equation {40 Years After, June 10-12, 2016, Toru□n Poland (invited speaker)
- Contemporary Trends in the Mathematics of Quantum Mechanics, 4-8 July 2016, Rome, Italy (invited speaker)
- Trieste Quantum Days 2017, SISSA, 20-24 February 2017, Trieste, Italy (invited speaker)
- IQIS 2017 - 10th Italian Quantum Information Science conference, 12-15 September 2017, Florence, Italy (contributed speaker)
- IICQI 2018, International Iran Conferences on Quantum Information, Sharif University of Technology, Teheran, Iran, 8-11 September 2018 (invited speaker)
- Quantum Resources and their Application, KCIK, Sopot, Poland, May 23rd-25th 2019 (invited speaker)
- Quantum 2019, Turin, Italy, May 26th, June 1st 2019 (invited speaker)
- 52 Symposium on Mathematical Physics, Torun, June 14-17 2021 (invited speaker)
- DPG-meeting 20 - 24 September 2021 (invited speaker)
- E.C.G. Sudarshan, P.M. Mathews and J. Rau Workshop, October 14 – 15, 2021 (invited speaker)
- Sixth Iranian Conference on Mathematical Physics, February 6-8, 2022 (keynote speaker)
- INDAM Quantum meeting, March 7-11, 2022 (invited speaker)
- 54 Symposium on Mathematical Physics, Toruń, June 8-11, 2023 (invited speaker)
- 55 Symposium on Mathematical Physics, Toruń, June 21-22, 2024 (invited speaker)

Participation in National and International Research Projects

- Italian PRIN 2002: Classical, Quantum and Stochastic Dynamical Systems (Local Unit Coordinator)
- Italian PRIN 2004: Classical, Quantum and Stochastic Systems with Infinitely Many Degres of Freedom (Local Unit Coordinator)
- Italian PRIN 2006: Quantum Noise in Mesoscopic Systems (Local Unit Coordinator)
- Italian PRIN 2022: Learning through and about quantum channels (Local Unit Coordinator)
- Local responsible for the INFN national research project Quantum: 2014-2019

Teaching

- Mathematical Methods for Physics (2nd year)
- Statistical Mechanics (4th year)
- Introduction to Quantum Information (4th year)

Former Master students and graduation year

- Tamara GRAVA (1994)
- Renato CAZZARO (1994)
- Cristiano GNESUTTA (1995)
- Adriano LAPEL (2000)
- Marco PIANI (2001)
- Francesca CHITTARO (2003)
- Caterina MORA (2004)
- Alexandra LIGUORI (2006)
- Luca FERALDI (2007)
- Pierfrancesco ROSINI (2008)
- Giovanni MORAS (2008)
- GianGiacomo GUERRESCHI (2008)
- Mauro TONON (2009)
- Marco BILARDELLO (2013)
- Marco PEZZUTTO (2013)
- Stefano MARCANTONI (2014)
- Van NUNG DON (2014)
- Enrico SINDICI (2015)
- Jacopo SURACE (2015)
- Ayooloowa OLAKUNLE ODUFOWORA (2016)
- Francesco PETIZIOL (2016)
- Nehad ATTAELMANAN ABDELRAHIMABROUK (2017)
- Eduardo QUINTANA MIRANDA (2018)
- Luigi BRANCATI (2018)
- Francesco SPADOTTO (2019)
- Stefano MANGINI (2019)
- Salvatore GATTO (2019)
- Federico Guglielmo ALBERTAN MIN (UniTo, 2021)
- Francesco VALIERA (2021)
- Stefano PISONI (UniBo, 2022)
- Leonardo CRUCIANI (2022)
- Antonio MASROPASQUA (2023)
- Stefano LANTIER (2024)

Former PhD students

- Raffaele ROMANO (Trieste University: 2001—2003)
- Valerio CAPPELLINI (Trieste University: 2002—2004)
- Marco PIANI (Trieste University: 2003—2005)
- Sebastiano ANDERLONI (Trieste University: 2007—2009)
- Alexandra LIGUORI (Trieste University: 2008—2010)
- Adam NAGY (Budapest Technical University: 2008—2010)
- Ugo MARZOLINO (Trieste University: 2009—2011)
- Mahya KARBALAI (SISSA, Trieste: 2010—2012)
- Giuseppe ARGENTIERI (Trieste University: 2010-2013)
- Kelvin TITIMBO (Trieste University: 2012-2014)
- Samad KHABBAZI OSKOU EI (Teheran University: 2013-2015)
- Federico CAROLLO (Trieste University: 2013-2015)
- Stefano MARCANTONI (Trieste University: 2015-2017)
- Francesca GEBBIA (Trieste University: 2019-2021)

Present PhD students

- Giovanni NICHELE (Trieste University: 2023-2025)
- Melika BABAKAN (Cotutelle with Sharif University of Technology of Teheran, Iran)