# Francesca Ferlaino – CV


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| **CONTACT:** | Institut für Experimentalphysik, Technikerstraße 25/2, 6020 Innsbruck, Austria<br>IQOQI-Innsbruck, Austrian Academy of Sciences | |
| | **Phone**: +43 512507 -52440 | **Date of Birth:** 23.12.1977 |
| | **Email**: Francesca.ferlaino@uibk.ac.at | **ORCID:** orcid.org/0000-0002-3020-6291 |
| **WEB:** | http://www.erbium.at | http://www.iqoqi.at |


**PROFESSIONAL EXPERIENCE**

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| 2019 – present | Managing and Scientific Director at the IQOQI |
| 2019 – present | Elected Member of the Senate of the University of Innsbruck. |
| 2014 – present | Full Professor of Physics (Tenure - P98), University of Innsbruck (Austria) & Scientific Director of the Institute for Quantum Optics and Quantum Information (IQOQI) of the Austrian Academy of Science |
| 2013-2017 | Director of the Innsbruck Physics Research Center |
| 2009-2014 | Tenure-Track Professorship (P99) for Atomic Physics, University of Innsbruck (2012-2014); Research and Teaching Associate (2009-2011) |
| 05-07/2016 | DIPC Visiting Fellowship, San Sebastian (Spain) |
| 04-05/2016 | JILA Visiting Fellowship, University of Colorado, Boulder (US) |
| 03-04/2016 | Bershadsky Distinguished Visiting Fellowship at Harvard University, Cambridge (US) |
| 2014 | Alexander von Humboldt Professorship (declined offer) |
| 03-06/2014 | Guest Lecturer at the University of Wien, Austria |
| 2007 - 2009 | Lise-Meitner Postdoctoral Fellow of the Austrian Science Fund (FWF) |
| 2006 - 2007 | Postdoctoral Scholar, University of Innsbruck (Austria) |
| 2004 - 2006 | Senior Scientist (Assegnista di ricerca), European Laboratory for Non-Linear Spectroscopy (LENS), Florence (Italy) |

**EDUCATION**

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| 2001 - 2004 | Ph.D, Physics, University of Florence and LENS, Italy (S.V: Inguscio) |
| 1995 - 2000 | Diploma in Physics, *magna cum laude*, University Federico II, Naples, IT (S.V: Barone) |
| 1999 - 2000 | Undergraduate Research Fellowship at International School for Advanced Studies (SISSA), Trieste, Italy |

**AWARDS & HONORS (selected)**

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| 2019 | Grand Prix de Physique "Cécile DeWitt-Morette/École de Physique des Houches" from the French Academy of Science |

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| 2019 | Junior BEC Award |
| 2017 | Antonio Feltrinelli Giovani for Physics of the Accademia dei Lincei, Italy |
| 2017 | Erwin Schrödinger Prize of the Austrian Academy of Sciences (ÖAW) |
| 2015 | Ignaz L. Lieben Prize of the Austrian Academy of Sciences (ÖAW) |
| 2014 | Sebetia-Ter International Prize "Premio Georges Charpak – Antonio Barone" |
| 2013 | Alexander-von-Humboldt Professorship (nominating University: Ulm (DE), declined) |
| 2011 | Preis der Landeshauptstadt Innsbruck (together with S. Knoop & M. Berninger) |
| 2010 | Kohlrausch Prize of the Austrian Physical Society (ÖPG) |

**MAIN AREAS OF RESEARCH**

Ultracold Quantum Gases and Mixtures ● Dipolar Quantum Physics● Strongly Correlated Many-Body Quantum Phase ● Ultracold Scattering and Few-Body Physics● Laser Cooling ● Atom-Light Interaction

**MOST IMPORTANT SCIENTIFIC ACHIEVEMENTS TO DATE**

First observation of a supersolid state in Erbium and Dysprosium (2019) and roton quasiparticles (2018) ● Observation of quantum-stabilized macro droplets (2018) ● First realization of strongly-correlated dipolar matter in an extended Bose-Hubbard setting (2016) ● Discover of chaotic scattering in multi-electron atoms (2014) ● Ground state RbCs molecules (2015) ● Bose-Einstein condensation of Er atoms (2012), degenerate Fermi gas (2014), and a dipolar quantum mixture of Er and Dys atoms (2018)

## Francesca Ferlaino – 10 Most Important Publications


1. *Long-lived and transient supersolid behaviors in dipolar quantum gases,* Chomaz, L.; Petter, D.; Ilzhöfer, P.; Natale, G.; Trautmann, A.; Politi, C.; Durastante, G.; Van Bijnen, R. M. W; Patscheider, A.; Sohmen, M.; Mark, M. J.; Ferlaino, F. Phys. Rev. X, 9, 021012, 2019, DOI: 10.1103/PhysRevX.9.021012
2. *Dipolar Quantum Mixtures of Erbium and Dysprosium Atoms,* Trautmann, A.; Ilzhöfer, P.; Durastante, G.; Politi, C.; Sohmen, M.; Mark, M. J.; Ferlaino, F., Phys. Rev. Lett., 121, 213601, 2018, DOI: https://doi.org/10.1103/PhysRevLett.121.213601
3. *Observation of roton mode population in a dipolar quantum gas,* Chomaz, L.; Van Bijnen, R. M. W.; Petter, D.; Faraoni, G.; Baier, S.; Becher, J. H.; Mark, M. J.; Waechtler, F.; Santos, L.; Ferlaino, F. Nature Phys. **14**, 442, 2018, DOI: http://dx.doi.org/10.1038/s41567-018-0054-7
4. *Quantum-fluctuation-driven crossover from a dilute Bose-Einstein condensate to a macro-droplet in a dipolar quantum fluid,* Chomaz, L.; Baier, S.; Petter, D.; Mark, M. J.; Wächtler, F.; Santos, L.; Ferlaino, F. Phys. Rev. X **6**, 041039, 2016, DOI: https://doi.org/10.1103/PhysRevX.6.041039
5. *Extended Bose-Hubbard Models with Ultracold Magnetic Atoms,* Baier, S.; Mark, M. J.; Petter, D.; Aikawa, K.; Chomaz, L.; Cai, Z.; Baranov, M.; Zoller, P.; Ferlaino, F.

Science **352**, 201, 2016, DOI: https://doi.org/10.1126/science.aac9812

6. *Observation of Fermi surface deformation in a dipolar quantum gas,* Aikawa, K.; Baier, S.; Frisch, A.; Mark, M.; Ravensbergen, C.; Ferlaino, F., Science **345**, 1484, 2014, DOI: https://doi.org/10.1126/science.1255259
7. *Quantum Chaos in Ultracold Collisions of Erbium,* Frisch, A.; Mark, M.; Aikawa, K.; Ferlaino, F.; Bohn, J. L.; Makrides, C.; Petrov, A.; Kotochigova, S., Nature **507**, 475, 2014, DOI; https://doi.org/10.1038/nature13137
8. *Bose-Einstein Condensation of Erbium,* Aikawa, K.; Frisch, A.; Mark, M.; Baier, S.; Rietzler, A.; Grimm, R.; Ferlaino, F., Phys. Rev. Lett. **108**, 210401, 2012, DOI: https://doi.org/10.1103/PhysRevLett.108.210401
9. *Evidence for universal four-body states tied to an Efimov trimer*
   Ferlaino, F.; Knoop, S.; Berninger, M.; Harm, W.; D'Incao, J. P.; Nägerl, H. C.; Grimm, R.
   Phys. Rev. Lett. **102**, 140401, 2009, DOI: https://doi.org/10.1103/PhysRevLett.102.140401
10. *Observation of an Efimov-like trimer resonance in ultracold atom-dimer scattering*
    Knoop, S.; Ferlaino, F.; Mark, M.; Berninger, M.; Schöbel, H.; Nägerl, H. C.; Grimm, R.
    Nature Physics **5**, 227-230, 2009, DOI: https://doi.org/10.1038/nphys1203

## Francesca Ferlaino – 10 Most Important Scientific Achievements

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***Additional Prizes:***

1. ERC Starting (2010) and ERC Consolidator (2015) Grant from the European Research Council
2. START Prize from the Austrian Science Fund (FWF) (2009)

***Plenary talks:***

3. 82. Annual Conference of the DPG and DPG Spring Meeting; Erlangen 2018

***Most important invited talks:***

4. ICAP – International Conference in atomic Physics (invited speakers at the last six editions: 2022-Toronto; 2018-Barcellona; 2016-Seoul; 2014-Washington; 2012-Paris; 2010-Cairns)
5. BEC conference- Sant Feliu de Guixols (invited speaker at the editions 2021; 2019; 2017; 2015; 2013; 2007)

***Membership, Commission of Trust, and referee activities:***

6. Elected Fellow of the American Physical Society (APS) (2019)
7. Strategic Research Agenda Working Group (SRA-WG) for the Quantum Flagship (since 2018)
8. Co-Speaker of the FWF Doctoral Program Atoms, Light, and Molecules (DK-ALM) (since 2016)
9. Member of the Strategic Advisory Board for QUANTERA-NET in Quantum Technologies (2015-2017)
10. Panel Member for the ERC Advanced Grant Panel 2016, 2018 and 2020(PE2)