

## Markus Aspelmeyer - Academic CV

### Personal Details

born 14.06.1974 in Schongau (Germany), married since 2004, 2 children

### Contact Details

University of Vienna, Faculty of Physics, Boltzmanngasse 5, A-1090 Vienna, Austria

Austrian Academy of Sciences, IQOQI, Boltzmanngasse 3, A-1090 Vienna, Austria

Phone: +43 1 4277 72531, Email: [markus.aspelmeyer@univie.ac.at](mailto:markus.aspelmeyer@univie.ac.at)

Webpages: <https://aspelmeyer.quantum.at/>, <https://iqoqi-vienna.at>, <https://vcq.quantum.at>

ORCID: <https://orcid.org/0000-0003-4499-7335>

Publications: <https://scholar.google.com/citations?hl=en&user=DH7xfEgAAAAJ>

### Education

1993 – 2002 Ludwig-Maximilians-Universität (LMU) Munich

(Physics Diploma 1998, Doctoral degree 2002)

1996 – 2002 Munich School of Philosophy (Philosophy Bachelor 2000)

1984 – 1993 Gesamtschule Gymnasium Schongau (Abitur 1993)

### Appointments

2019 – Scientific Director, Institute for Quantum Optics and Quantum Information (IQOQI), Austrian Academy of Sciences, Vienna, Austria

2009 – Professor of Physics (Full Professor), Faculty of Physics, University of Vienna

2007 – 2009 Senior Scientist, IQOQI, Austrian Academy of Sciences, Vienna, Austria

2003 – 2006 PostDoc, Faculty of Physics, University of Vienna

2002 – 2003 Feodor Lynen Postdoctoral Fellow of the Alexander von Humboldt Foundation, University of Vienna, with Anton Zeilinger

1999 – 2001 Research Assistant, LMU Munich, Germany

### Main Research Areas

Quantum optomechanics, precision tests of gravity, gravitational quantum physics

### Honors, Awards & Distinctions

2025 Quantum Electronics and Optics Prize for fundamental aspects, European Physical Society

2025 MCQST Distinguished Lecturer, Munich Center for Quantum Science and Technology

2025 named among “The Photonics 100” for 2025

2024 Werner Heisenberg-Medal, Alexander von Humboldt-Foundation

2020 ERC Synergy Grant, European Research Council

2019 Gravity Research Foundation Award for Essays on Gravitation, First Prize

2017 Science Prize of the City of Vienna

2016 Berthold Leibinger Innovation Prize, 2nd Prize

2015 AMA Association for Sensors and Measurement Innovation Award

2015 ERC Consolidator Grant, European Research Council

2014 GEWINN Young Entrepreneur Prize 2014, Winner in category “High-Tech”

2014 Houska Prize 2014 Finalist, B&C Privatstiftung

2012 W.M. Keck Institute for Space Studies Distinguished Visiting Scholar, Caltech

2010 Friedrich Wilhelm Bessel Research Award, Alexander von Humboldt-Foundation

2009 ERC Starting Grant, European Research Council

2008 START Prize, Austrian Ministry of Science and Education (BMWF)

2008 Fritz Kohlrusch Prize, Austrian Physical Society

2007 Ignaz L. Lieben Prize, Austrian Academy of Sciences

2007 Fresnel Prize, European Physical Society

2002 Feodor Lynen Fellowship, Alexander von Humboldt Foundation

### **Elected Memberships**

2022	Austrian Academy of Sciences, Full Member
2018	Academy of Sciences and Humanities in Hamburg, Corresponding Member
2018	Austrian Academy of Sciences, Corresponding Member
2015	World Technology Network, Fellow
2013	European Academy of Sciences and Arts, Member
2013	American Physical Society, Fellow
2010	Austrian Academy of Sciences, Member of the "Junge Kurie" (Young Academy)

### **Editorial Boards**

2016 - 2024	Quantum Science and Technology, Board Member
2018	Classical and Quantum Gravity, Guest Editor
2011	Foundations of Physics, Guest Editor
2008, 2014	New Journal of Physics, Guest Editor

### **Institutional Responsibilities**

2023 -	Member of the Board of Directors, quant.A FWF Cluster of Excellence
2019 -	Managing Director, IQOQI Vienna, Austrian Academy of Sciences
2014 - 2020	Speaker of the Vienna Graduate School on "Complex Quantum Systems" (CoQuS)
2012 - 2022	Member of the Faculty Board, Faculty of Physics, University of Vienna, Austria
2010 - 2023	Speaker of the Vienna Center for Quantum Science and Technology (VCQ)
2010 - 2025	Partner Investigator, Australian Research Council (ARC) Center for Engineered Quantum Systems (EQUS), Australia

### **Commissions of Trust**

2023-	Advisory Board, Carl-Zeiss-Stiftung Center for Quantum Photonics
2022 -	Advisory Board (Chairman), Munich Quantum Valley (MQV)
2021 -	Scientific Advisory Board, Max-Planck Institute for Quantum Optics in Garching
2020 -	Advisory Board, Dieter W. Bäuerle Stiftung für Wissenschaft und Kunst
2020 -	Scientific Advisory Board, Center for Integrated Quantum Science & Technology (IQST)
2019 -	Member of the Board of Trustees, Physik in unserer Zeit
2019 -	Scientific Advisory Board, Munich Center for Quantum Science and Technology (MCQST)
2015 - 2019	Chairman of the Advisory Board, Crystalline Mirror Solutions GmbH, Co-Founder
2014 - 2016	Member of the Board, Chemisch-Physikalische Gesellschaft (CPG)
2013 - 2018	Scientific Advisory Board, Max-Planck Institute for Gravitational Physics (AEI)
2013 - 2014	Executive Committee (Member at Large), Topical Group on Quantum Information, American Physical Society
2012 - 2015	Board of Directors, Young Academy ("Junge Kurie") of the Austrian Academy of Sciences
2011 - 2022	APART and DOC Prize Committee of the Austrian Academy of Sciences

Review Panel Member among others for the Alexander von Humboldt Foundation, the Swiss National Science Foundation (SNF), the European Commission (EC), the U.S. National Science Foundation (NSF), the German Research Foundation (DFG), the French Research Agency (ANR), the Netherland National Research Council (NWO).

### **Other Activities**

2022	Co-Founder of 'Innotonix GmbH'
2013	Co-Founder of 'Crystalline Mirror Solutions GmbH' (now: 'Thorlabs Crystalline Solutions')
2010	Founding Member of the Vienna Center for Quantum Science and Technology (VCQ)

### Organization of Conferences (selection)

2024	"Gravity and Entanglement", DESY Hamburg, Germany, with Wilfried Buchmüller, Georgi Dvali, Jan Louis, Roman Schnabel
2020	Summer School "Gravitational Quantum Physics", Vienna, Austria, with Veronika Baumann, Christopher Hilweg, Marius Krumm, David Trillo
2019	"ITAMP workshop on Laboratory Cosmology: AMO Physics Techniques and Applications", ITAMP, Harvard, USA, with Hossein Sadeghpour, Andrew Geraci
2018	Gordon Research Conference on "Mechanical Systems in the Quantum Regime", Ventura, CA, USA, with John Teufel
2016	"Quantum Physics and Gravity", 5-week thematic program funded by the Erwin-Schrödinger-Institute (ESI), with Caslav Brukner, Daniel Grumiller, Domenico Giulini, Soo-Jong Rey
2015	"Gravitation 2015", with D. Grumiller; 4-week centennial event at the Austrian Academy of Sciences for a general audience; including 8 public lectures, an education program for school classes, guided public exhibit and a 3-day scientific workshop "100 years of curved space-time"; the general program attracted more than 2,000 visitors
2015	"Probing the Mystery: Theory and Experiment in Quantum Gravity", Galiano Island, Canada, with Philip C. E. Stamp, William G. Unruh, Robert M. Wald

### Publication Metrics and Invited Presentations

ISI Highly Cited Researcher (2017-2023), more than 100 publications, 22 in Nature and Science, 2 patents, including

- "Real-time optimal quantum control of mechanical motion at room temperature". L. Magrini, P. Rosenzweig, C. Bach, A. Deutschmann-Olek, S. G. Hofer, S. Hong, N. Kiesel, A. Kugi, M. Aspelmeyer, Nature 595, 373 (2021)
- "Measurement of Gravitational Coupling between Millimeter-Sized Masses". T. Westphal, H. Hepach, J. Pfaff, M. Aspelmeyer, Nature 591, 225-228 (2021)
- "Cooling of a levitated nanoparticle to the motional quantum ground state". U. Delić, M. Reisenbauer, K. Dare, D. Grass, V. Vuletić, N. Kiesel, M. Aspelmeyer, Science 367, 892 (2020)
- "Quantum Superposition of Massive Objects and the Quantization of Gravity". A. Belenchia, R. Wald, F. Giacomini, E. Castro-Ruiz, Č. Brukner, M. Aspelmeyer. Phys. Rev. D 98, 126009 (2018)
- "Tenfold reduction of Brownian noise in optical interferometry". G. D. Cole, W. Zhang, M. J. Martin, J. Ye, M. Aspelmeyer, Nature Photonics 7, 644 (2013)
- „Observation of strong coupling between a micromechanical resonator and an optical cavity field". S. Gröblacher, K. Hammerer, M. R. Vanner, M. Aspelmeyer, Nature 460, 724 (2009)

More than 200 invitations to international conferences, colloquia, graduate schools and public talks, incl.

- Colloquium Ehrenfestii, Leiden University, March 2023, The Netherlands
- Niels Bohr Lecture, University of Copenhagen, December 2022, Denmark
- Schrödinger Lecture, Trinity College Dublin, November 2021, Ireland
- Jentschke Lecture, DESY, November 2018, Hamburg, Germany
- Kavli Colloquium, TU Delft, March 2017, Delft, Netherlands
- Ångström Lecture, Uppsala University, May 2016, Uppsala, Sweden
- Enrico Fermi Colloquium, LENS, November 2015, Florence, Italy
- Plenary Lecture, Photonics West, February 2013, San Francisco, USA
- Stoner Colloquium, University of Leeds, April 2012, Leeds, UK

### Mentoring and supervision (last 5 years)

During the last 5 years I have been collaborating with and supervising 15 PostDocs and 26 PhD students from 16 different countries. My group has a successful track record in empowering young researchers to acquire attractive positions in both academia and industry. In total, 14 alumni from my team are now in tenured and tenure-track faculty positions around the world, and a similar number in high-profile corporate positions up to the executive level.