CURRICULUM VITAE of Prof. Dr.-Ing. habil. Jürgen Müller

PERSONAL INFORMATION

Date of birth: March 13, 1962

Nationality: German

URL for web site: https://www.ife.uni-hannover.de/de/mueller/

EDUCATION

2001	Habilitation for Physical Geodesy at Technical University of Munich (TU Munich), Germany
1991	PhD thesis on "Analysis of Lunar Laser Ranging data" at TU Munich, Germany
1983-1988	Diploma degree in Geodesy ("Vermessungswesen") at TU Munich, Germany

CURRENT POSITION

Since 2001	Professor (W3) at Leibniz Universität Hannover, Germany Head of the Institute of Geodesy ("Institut für Erdmessung")

PREVIOUS POSITIONS

1996-2001	Scientific assistant at the Institute of Astronomical and Physical Geodesy at TU Munich
1994-1995	Research Fellowship of the "Deutsche Forschungsgemeinschaft" (German Research Foundation) at the Research Facility for Space Geodesy, TU Munich
1988-1994	Scientific assistant at the Research Facility for Space Geodesy, TU Munich

FELLOWSHIPS AND AWARDS

2009	Professorship in Astron. & Phys. Geodesy at Techn. Univ. Munich denied
1993	Award of „Bund der Freunde der TU München" for the best PhD. thesis in the faculty of civil and geodetic engineering between 1991 and 1993
1988	Harbert award of the German Society of Surveying (DVW)

SUPERVISION OF GRADUATE STUDENTS AND POSTDOCTORAL FELLOWS

2007 – 2019	7 Postdocs, 26 PhD students (21 finished), 5 – 10 Master students per year at Institute of Geodesy, Leibniz Universität Hannover (LUH), Germany

TEACHING ACTIVITIES (major courses)

Since 2003	Bachelor – Fundamentals of Geodesy, Leibniz Universität Hannover (LUH), Germany
Since 2001	Bachelor – Physical Geodesy, LUH, Germany
Since 2003	Bachelor – Space Geodetic Techniques, LUH, Germany
Since 2003	Master – Relativistic Modeling in Geodesy, LUH, Germany
Since 2003	Master – Recent Satellite Gravimetry Missions, LUH, Germany
Since 2003	Master – Satellite Orbit Calculation, LUH, Germany

ORGANISATION OF SCIENTIFIC MEETINGS

2017-2019	co-organizing workshop series on Relativistic Geodesy at International Space Science Institute (ISSI), Berne, 25 participants
2009-2012	co-organizing workshop series on Lunar Laser Ranging at ISSI, Berne, Switzerland, 25 participants
2012, 2014	LLR sessions at ILRS Laser Ranging Workshops in Fujiyoshida, Japan and Annapolis, USA
2003/2008/2012	responsible organizer of German Geodetic Week in Hamburg, Bremen and Hannover, 70 participants, Germany
Since 2001	organizer resp. co-organizer of sessions at EGU (Vienna), COSPAR (Pasadena, Sydney), AGU (San Francisco) and IAG meetings (Potsdam, Montreal)

INSTITUTIONAL RESPONSIBILITIES

Since 2019	Member of the Steering Committee of the centre of excellence QuantumFrontiers, LUH
Since 2017	Member of the Steering Committee of the LUH research center on geosciences FZ:GEO
2015-2017	Member of the Faculty Committee, LUH
Since 2015	Chair of examination board for all study programs in Geodesy and Geoinformatics, LUH
2014-2019	Member of the Steering Committee of the DFG SFB 1128 geo-Q "Relativistic geodesy and gravimetry with quantum sensors" at LUH (since August 2017, spokesman of geo-Q)
Since 2014	Member of the Steering Committee of the Leibniz research school QUEST (Quantum Engineering and Space-Time Research) and of the research building HITec
2007-2017	Member of the Steering Committee of the centre of excellence QUEST (Quantum Engineering and Space-Time Research) at LUH
2006-2018	Lunar Laser Ranging representative in the Governing Board of the International Laser Ranging Service (ILRS)
2006-2016	ILRS representative in the Directing Board of the International Earth Rotation and Reference Systems Service (IERS)
2006-2014	Spokesman of DFG Research unit FOR 584 „Earth rotation and global dynamic processes"
2003-2013	Dean of study affairs, LUH, Germany
Since 2001	Member of various Appointment Committees ("Berufungskommission") at LUH

COMMISSIONS OF TRUST

2011-2016	Member of Scientific Advisory Board of GFZ Potsdam, Germany
2012	Chair of review panel for future ESA Earth science missions (EE8 call), ESTEC, The Netherlands
2010, 2015, 2020	Evaluation of the research program of the German Research Group on Satellite Geodesy (FGS), Wettzell and Munich, Germany (2015 as chair of the review panel)
2009-2013	Member of ESA Earth Science Advisory Committee (ESAC), Frascati, Italy and ESAC, representative to Space Science Advisory Committee (SSAC), Paris, France
Since 2003	Editorship of the German Geodetic Journal zfv, Germany
Since 2001	Reviewer for various scientific journals like Journal of Geodesy, Journal of Geodetic Science (also member of editorial board), Classical and Quantum Gravity, Journals of Advances in Space Research, etc.
Since 2001	Reviewer of various research proposals of national funding agencies in Switzerland, Austria, Czech Republic, Sweden, Germany
Since 2001	External (confidential) reviewer in appointment procedures of professors at various German and European universities

ELECTED MEMBER OF SCIENTIFIC SOCIETIES

Since 2019	Fellow of the International Association of Geodesy (IAG)
Since 2019	Ordinary Member of the Leibniz Society of Sciences to Berlin e.V.
Since 2019	President of the IAG project on Novel Sensors and Quantum Technology for Geodesy
Since 2011	Member of the Steering Committee of DVW (Geman Society of Geodesy, Geoinformation and Land Management), Germany
2010-2019	Member of GGOS Standing Committe on Satellite Missions (since 2015 chair)
Since 2008	Ordinary Member of „Braunschweigische Wissenschaftliche Gesellschaft" (BWG), 2012 - 2017 chairman of BWG class for engineering sciences
Since 2004	German Representative in IAG (International Association of Geodesy) and IAG Representative for Geodesy in the National Committee of Geodesy and Geophysics (NKGG), since 2011 chairman of NKGG
Since 2002	Member of the German Geodetic Commission (DGK), since 2015 chair of section Geodesy

MAJOR COLLABORATIONS

Since 2002	Member of the European GRACE Science Team
Since 1999	Member of the ILRS Analysis Working Group and Lunar analysis center

In addition, member of IAG study groups, DFG priority programs ("Mass transport"), BMBF Geotechnologien program on the use of satellite missions CHAMP, GRACE and GOCE, etc.

THIRD-PARTY FUNDING

When only counting the directly assigned grants, the total amount of funding from the last ten years was ca. 6,500 T€. When including the institutional and departmental responsibilities, it was more than 30,000 T€.

Special completed grants were the contribution to the cluster QUEST (Quantum Engineering and Space-Time Research) within the German Excellence strategy, 2009 to 2014, with total funds of about 34,700 T€. A further grant was the DFG CRC 1128 geo-Q (2014 – 2019) which was funded with 11,500 T€ in the first 4-year funding period. I was spokesperson of that CRC and PI of 3 projects. The successor DFG CRC 1464 TerraQ has successfully passed the first round in 2019 and will finally be evaluated in 2020. It will be funded from 2021 on, if successful. Another major project was the DFG Research unit FOR 584 "Earth rotation and global dynamic processes" (2006 – 2014) with a total amount of about 4,600 T€.

A major ongoing grant is the center of excellence QuantumFrontiers EXC 2123 within the German excellence strategy (start 2019), with total funds of about 55,000 T€ in the first 7-year funding period. I am PI of 2 projects. In addition, a new DLR institute on "Satellite Geodesy and Inertial Sensing" has been founded in Hannover in 2019 with total funds of about 7,500 T€ per year (plus third-party funding), of which I am head of the department of Geodesy.

PUBLICATIONS

Overall more than 150 refereed publications, about 100 in the past 10 years. They have been cited more than 1300 times in the past 5 years; h-index = 26 (google scholar).
A list of all publications can be found on https://www.ife.uni-hannover.de/de/mueller/publikationen/

Selected Papers and Books

1. Douch, K., Schubert, C., Wu, H., **Müller, J**. and Pereira Dos Santos, F.: *Simulation-based evaluation of a cold atom interferometry gradiometer concept for gravity field recovery* Advances in Space Research 61(5):1307-1323 (2018), doi: 10.1016/j.asr.2017.12.005
2. Freier, C., Hauth, M., Schkolnik, V., Leykauf, B., Schilling, M., Wziontek, H., Scherneck, H., **Müller, J**., Peters, A.: *Mobile quantum gravity sensor with unprecedented stability* Journal of Physics Conference Series 723(1):012050 (2016), doi: 10.1088/1742-6596/723/1/012050
3. Hofmann, F., **Müller, J**.: *Relativistic Tests with Lunar Laser Ranging* Classical and Quantum Gravity 35(3):035015 (26pp) (2018), doi: 10.1088/1361-6382/aa8f7a
4. **Müller, J**., Murphy, T., Schreiber, U., Shelus, P., Torre, J., Williams, J., Boggs, D., Bouquillon, S. Bourgoin, F. Hofmann: *Lunar Laser Ranging – A Tool for General Relativity, Lunar Geophysics and Earth Science* Journal of Geodesy 93:2195-2210 (2019), doi: 10.1007/s00190-019-01296-0
5. **Müller, J**., Dirkx, D., Kopeikin, S., Lion , G., Panet, I., Petit, G., Visser, P.: *High Performance Clocks and Gravity Field Determination* Space Science Reviews 214:5 (2018), doi: 10.1007/s11214-017-0431-z
6. **Müller, J**., Hofmann, F., Biskupek, L.: *Testing various facets of the equivalence principle using Lunar Laser Ranging* Classical and quantum gravity 29:184006 (9pp) (2012) , doi: 10.1088/0264-9381/29/18/184006
7. **Müller, J.**, Soffel, M., Klioner, S.: *Geodesy and Relativity* Journal of Geodesy 82(3):133-145 (2008), doi: 10.1007/s00190-007-0168-7
8. Steffen, H., Gitlein, O., Denker, H., **Müller, J**., Timmen, L.: *Present rate of uplift in Fennoscandia from GRACE and absolute gravimetry* Tectonophysics 474:69-77 (2009), doi: 10.1016/j.tecto.2009.01.012
9. Torge, W., **Müller, J**.: *Geodesy*, 4th edition, de Gruyter, Berlin/Boston (2012)
10. Wu, H., **Müller, J**., Lämmerzahl, C.: *Clock networks for height system unification: a simulation study* , Geophysical Journal International 216(3):1594-1607 (2019), doi: 10.1093/gji/ggy508

MOST SIGNIFICANT RESEARCH ACHIEVEMENTS

We run one of only 4 LLR (Lunar Laser Ranging) analysis centers worldwide. Our group is leading in testing general relativity using LLR data. Its estimated limits for a possible temporal variation of the gravitational constant and the validity of the strong equivalence principle are world record.

Besides those LLR-related activities, close collaboration with physics has been established in the past 15 years to develop novel concepts for geodetic applications, especially for gravity field observations. These comprise the application of atomic interferometry for gravimetric measurements, the use of laser interferometry for inter-satellite tracking (satellite mission GRACE-FO was launched in May 2018) and the use of highly accurate optical clocks to determine the Earth geopotential (keyword "relativistic geodesy").