

FELIX WIDMANN

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EDUCATION

December 2021 – Today

Postdoctoral Researcher in Astrophysics

Max Planck Institute for Extraterrestrial Physics Munich, Germany

- Research Topic: *Instrumental work on GRAVITY+ and studies of the supermassive black hole Sgr A**

September 2017 – November 2021

PhD in Astrophysics

Max Planck Institute for Extraterrestrial Physics Munich, Germany

- Research Topic: *Instrumental Progress to test General Relativity in the Galactic Center*
- Supervisor: Prof. Dr. Reinhard Genzel

October 2014 – July 2017

Master of Science in Physics

Ruprecht-Karls-Universität Heidelberg, Germany

October 2011 – September 2014

Bachelor of Science in Physics

Ruprecht-Karls-Universität Heidelberg, Germany

TALKS & CONFERENCES

VLT Summer School (online)	June 2021
<i>Lecture: The GRAVITY instrument and its science results</i>	
SPIE Astronomical Telescopes + Instrumentation 2020 (online)	December 2020
<i>Talk: Polarization analysis of GRAVITY and the VLTI</i>	
Annual meeting of the MAGIC Collaboration (online)	November 2020
<i>Invited talk: Public Talk: The Galactic Center black hole</i>	
Jahrestagung der Astronomischen Gesellschaft (online)	September 2020
<i>Talk: The Galactic Center black hole with GRAVITY</i>	
SPIE Astronomical Telescopes & Instrumentation (Austin, USA)	June 2018
<i>Talk: The piston reconstruction experiment</i>	
<i>Poster: Improving GRAVITY towards fainter targets</i>	
NYRIA annual workshop (Leiden, Netherlands)	May 2018
<i>Talk: Measuring polarization with the VLTI</i>	
Wavefront sensing in the VLT/ELT era (Marseille, France)	October 2016
<i>Talk: How to use wavefront data to measure differential piston for interferometry</i>	

FIRST & CORRESPONDING AUTHOR PUBLICATIONS

GRAVITY Collaboration (in preparation), *Polarization model of the VLTI and GRAVITY*

GRAVITY Collaboration (2021), *Improved GRAVITY astrometric accuracy from modeling optical aberrations* [A&A, 647, A, 59G](#)

GRAVITY Collaboration (2020), *The flux distribution of Sgr A**, [A&A, 638, A2, 12](#)

GRAVITY Collaboration (2019), *Test of the Einstein Equivalence Principle near the Galactic Center Super-massive Black Hole*, [PhRvL, 475, 1224](#)

Widmann, F., Pott, J.-U., Velasco, S. (2018), *P-REx: The Piston Reconstruction Experiment for infrared interferometry*, [MNRAS, 122, 10, 101102](#)

Widmann, F., Beuther, H., Schilke, P., Stanke, T. (2016), *SiO: Not the perfect outflow tracer*, [A&A, 589, A29](#)

CO-AUTHOR PUBLICATIONS WITH MAJOR CONTRIBUTIONS

GRAVITY Collaboration (2020), *Dynamically important magnetic fields near the event horizon of Sgr A** [A&A, 643, A, 56G](#)

GRAVITY Collaboration (2020), *Detection of the Schwarzschild precession in the orbit of the star S2 near the Galactic centre massive black hole*, [A&A, 636, L5, 14](#)

GRAVITY Collaboration (2018), *A geometric distance measurement to the Galactic center black hole with 0.3% uncertainty*, [A&A, 625, L10, 10](#)

GRAVITY Collaboration (2018), *Detection of the gravitational redshift in the orbit of the star S2 near the Galactic centre massive black hole*, [A&A, 615, L15, 10](#)

OBSERVING EXPERIENCE

Very Large Telescope Interferometer, Chile

GRAVITY UTs: > 50 nights

GRAVITY ATs: > 10 nights

Very Large Telescope, Chile

SINFONI: > 10 nights

TECHNICAL EXPERIENCE

OS	Linux/Unix, Windows
Programming	Python, Matlab, bash Some experience in: Haskell, C, C++, Yorick
Typesetting	L ^A T _E X, Microsoft Office
Data reduction	spred (SINFONI), GRAVITY DRS, esoreflex, GILDAS
Data analysis	molecfits

LANGUAGES

German	Mother tongue
English	Fluent
Spanish	Very good command
Dutch	Good command

FULL LIST OF PUBLICATIONS

48. Lacour, S et. al (2021), *The mass of β Pictoris c from β Pictoris b orbital motion*, [A&A, 654, L2, 11](#)
47. GRAVITY Collaboration (2021), *The GRAVITY young stellar object survey. VI. Mapping the variable inner disk of HD 163296 at sub-au scales*, [A&A, 654, A, 97G](#)
46. GRAVITY Collaboration (2021), *A geometric distance to the supermassive black Hole of NGC 3783*, [A&A, 654, A, 85G](#)
45. GRAVITY Collaboration (2021), *A geometric distance to the supermassive black Hole of NGC 3783*, [A&A, 654, A, 85G](#)
44. GRAVITY Collaboration (2021), *Constraining particle acceleration in Sgr A* with simultaneous GRAVITY, Spitzer, NuSTAR, and Chandra observations*, [A&A, 654, A, 22G](#)
43. Kammerer, J. et. al (2021), *GRAVITY K-band spectroscopy of HD 206893 B. Brown dwarf or exoplanet*, [A&A, 652, A, 57K](#)
42. GRAVITY Collaboration (2021), *MOLsphere and pulsations of the Galactic Center's red supergiant GCIRS 7 from VLTI/GRAVITY*, [A&A, 651, A, 37G](#)
41. Jiménez-Rosales, A. et. al (2021), *Relative depolarization of the black hole photon ring in GRMHD models of Sgr A* and M87**, [MNRAS, 503 4563J](#)
40. GRAVITY Collaboration (2021), *The central parsec of NGC 3783: a rotating broad emission line region, asymmetric hot dust structure, and compact coronal line region*, [A&A, 648, A, 117G](#)
39. GRAVITY Collaboration (2021), *The GRAVITY young stellar object survey. V. The orbit of the T Tauri binary star WW Cha*, [A&A, 648, A, 37G](#)
38. Wang, J. J. et. al (2021), *Constraining the Nature of the PDS 70 Protoplanets with VLTI/GRAVITY*, [AJ, 161, 148W](#)
37. GRAVITY Collaboration (2021), *Improved GRAVITY astrometric accuracy from modeling optical aberrations*, [A&A, 647, A, 59G](#)
36. GRAVITY Collaboration (2021), *Detection of faint stars near Sagittarius A* with GRAVITY*, [A&A, 645, A, 127G](#)
35. GRAVITY Collaboration (2021), *The GRAVITY young stellar object survey. IV. The CO overtone emission in 51 Oph at sub-au scales*, [A&A, 645, A, 50G](#)
34. Dexter, J. et. al (2020), *Determining Subparsec Supermassive Black Hole Binary Orbits with Infrared Interferometry*, [ApJ, 905, 33D](#)
33. GRAVITY Collaboration (2020), *The spatially resolved broad line region of IRAS 09149-6206*, [A&A, 643, A, 154G](#)
32. GRAVITY Collaboration (2020), *Dynamically important magnetic fields near the event horizon of Sgr A**, [A&A, 643, A, 56G](#)
31. Dexter, J. et. al (2020), *Sgr A* near-infrared flares from reconnection events in a magnetically arrested disc*, [MNRAS, 497, 4, 4999](#)
30. GRAVITY Collaboration (2020), *Direct confirmation of the radial-velocity planet β Pictoris c*, [A&A, 642, L2, 8](#)
29. GRAVITY Collaboration (2020), *The GRAVITY young stellar object survey. III. The dusty disk of RY Lup*, [A&A, 642, A162, 9](#)
28. Lagrange, A. M. et. al (2020), *Unveiling the β Pictoris system, coupling high contrast imaging, interferometric, and radial velocity data*, [A&A, 642, A18, 17](#)

27. GRAVITY Collaboration (2020), *A measure of the size of the magnetospheric accretion region in TW Hydrae*, [Nature](#), **584**, 547
26. GRAVITY Collaboration (2020), *The flux distribution of Sgr A**, [A&A](#), **638**, A2, 12
25. Dexter, J. et. al (2020), *A parameter survey of Sgr A* radiative models from GRMHD simulations with self-consistent electron heating*, [MNRAS](#), **494**, 3, 4168
24. GRAVITY Collaboration (2020), *Detection of the Schwarzschild precession in the orbit of the star S2 near the Galactic centre massive black hole*, [A&A](#), **636**, L5, 14
23. GRAVITY Collaboration (2020), *The GRAVITY young stellar object survey. II. First spatially resolved observations of the CO bandhead emission in a high-mass YSO*, [A&A](#), **635**, L12, 9
22. GRAVITY Collaboration (2020), *Modeling the orbital motion of Sgr A*'s near-infrared flares*, [A&A](#), **635**, A143, 9
21. GRAVITY Collaboration (2020), *The resolved size and structure of hot dust in the immediate vicinity of AGN*, [A&A](#), **635**, A92, 14
20. GRAVITY Collaboration (2020), *An image of the dust sublimation region in the nucleus of NGC 1068*, [A&A](#), **634**, A1, 12
19. GRAVITY Collaboration (2020), *Peering into the formation history of β Pictoris b with VLTI/GRAVITY long-baseline interferometry*, [A&A](#), **633**, A110, 19
18. GRAVITY Collaboration (2019), *The GRAVITY Young Stellar Object survey. I. Probing the disks of Herbig Ae/Be stars in terrestrial orbits*, [A&A](#), **632**, A53, 22
17. GRAVITY Collaboration (2019), *Scalar field effects on the orbit of S2 star*, [MNRAS](#), **489**, 4, 4606
16. GRAVITY Collaboration (2018), *A geometric distance measurement to the Galactic center black hole with 0.3% uncertainty*, [A&A](#), **625**, L10, 10
15. GRAVITY Collaboration (2019), *Test of the Einstein Equivalence Principle near the Galactic Center Supermassive Black Hole*, [PhRvL](#), **475**, 1224
14. GRAVITY Collaboration (2019), *First direct detection of an exoplanet by optical interferometry. Astrometry and K-band spectroscopy of HR 8799 e*, [A&A](#), **623**, L11, 6
13. Habibi, M. et. al (2019), *Spectroscopic Detection of a Cusp of Late-type Stars around the Central Black Hole in the Milky Way*, [ApJL](#), **872**, L15, 7
12. Gillessen, S. et. al (2019), *Detection of a Drag Force in G2's Orbit: Measuring the Density of the Accretion Flow onto Sgr A* at 1000 Schwarzschild Radii*, [ApJ](#), **871**, 126, 9
11. GRAVITY Collaboration (2018), *Multiple star systems in the Orion nebula*, [A&A](#), **620**, A116, 26
10. GRAVITY Collaboration (2018), *Spatially resolved rotation of the broad-line region of a quasar at sub-parsec scale*, [Nature](#), **567**, 7733, 657
9. GRAVITY Collaboration (2018), *Detection of orbital motions near the last stable circular orbit of the massive black hole SgrA**, [A&A](#), **618**, L10, 5
8. GRAVITY Collaboration (2018), *GRAVITY chromatic imaging of η Car's core. Milliarcsecond resolution imaging of the wind-wind collision zone*, [A&A](#), **618**, A125, 30
7. Von Fellenberg, S. et. al (2018), *A Detection of Sgr A* in the Far Infrared*, [ApJ](#), **862**, 2, 129
6. Widmann, F. et. al (2018), *Improving GRAVITY towards observations of faint targets*, [Proc. SPIE](#), **107010K**
5. GRAVITY Collaboration (2018), *Detection of the gravitational redshift in the orbit of the star S2 near the Galactic centre massive black hole*, [A&A](#), **615**, L15, 10

4. Waisberg, I. et. al (2018), *What stellar orbit is needed to measure the spin of the Galactic centre black hole from astrometric data?*, *MNRAS*, 476, 3600
3. Widmann, F. et. al (2018), *P-REx: The Piston Reconstruction Experiment for infrared interferometry*, *MNRAS*, 122, 10, 101102
2. Pott, J.-U. et. al (2016), *P-REx: the piston drift reconstruction experiment*, *Proc. SPIE*, 99073E
1. Widmann, F. et. al (2016), *SiO: Not the perfect outflow tracer*, *A&A*, 589, A29