

# Björn Müller

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Born: December 17, 1996—Göttingen, Germany  
Nationality: German

## Current position

*Phd Student*, Max-Planck-institute for Solar System Research, Göttingen

## Areas of specialisation

Helioseismology, Inverse Problems, Galactic Echomapping

## Education

- 2018 BSc in Physics, Georg-August-University, Göttingen
- 2018 BSc in Mathematics, Georg-August-University, Göttingen  
*Inversion of Meridional Flow Using Pinsker Estimator*, Supervisor: Prof. Dr. Laurent Gizon, Prof. Dr. Thorsten Hohage, Dr. Damien Fournier, Dr. Vincent Böning
- 2020 MSc in Physics, Georg-August-University, Göttingen  
*Reverberation Mapping of active galactic nuclei*, Supervisors: Prof. Dr. Wolfram Kollatschny, Martin Ochmann
- 2020- PHD in Physics: "Iterative helioseismic holography", Supervisors: Prof. Dr. Laurent Gizon, Prof. Dr. Thorsten Hohage, Dr. Damien Fournier

## Publications & talks

### JOURNAL ARTICLES

- 2022 W. Kollatschny, M. W. Ochmann, S. Kaspi, C. Schumacher, E. Behar, D. Chelouche, K. Horne, B. Müller, S. E. Rafter, R. Chini, M. Haas and M.A. Probst, The Great Slump: Mrk 926 reveals

discrete and varying Balmer line satellite components during a drastic phase of decline, *A&A* 657, A122

2023 B. Müller, T. Hohage, L. Gizon and D. Fournier, Quantitative passive imaging by iterated back propagation, to be submitted

2023 B. Müller, T. Hohage, L. Gizon and D. Fournier, Validating inversions for solar differential rotation and meridional flows using iterative helioseismic holography, to be submitted

#### CONFERENCE PROCEEDINGS

2022 B. Müller, L. Gizon, T. Hohage, D. Fournier, Iterative helioseismic holography-Inversions for solar differential rotation, *15th International Conference on Mathematical and Numerical Aspects of Wave Propagation*, Paris, 2022

#### 0.1 TALKS

- Ants Workshop on computational helioseismology 2021, online, March 22-24, 2021  
Talk: *Iterative holography*
- CRC 1456 Retreat 2021, August 31-September 01 2021, Hofgeismar, Germany  
Talk: *Correlations of solar oscillations: modeling and inversions*
- CRC 1456-workshop inverse problems in imaging, 18.11.2021, Goettingen, Germany  
Talk: *Iterative helioseismic holography-Measure the solar differential rotation*
- Conference on Mathematics of Wave Phenomena 2022, Karlsruhe, Germany, February 14-18, 2022  
Talk: *Quantitative passive imaging by iterative helioseismic holography*
- 10th International Conference: "Inverse Problems: Modelling and Observations", May 22-28, 2022, Malta  
Talk: *Quantitative passive imaging by iterative helioseismic holography*
- 15th International Conference on Mathematical and Numerical Aspects of Wave Propagation (WAVES2022), Paris, France, July 25-29, 2022  
Talk: *Iterative helioseismic holography-Inversions for solar differential rotation*
- Symposium on Inverse Problems: From experimental data to models and back, September 19-21 2022, Potsdam, Germany  
Talk: *Solving a quantitative passive imaging problem in helioseismology by iterative holography: Inversions for solar differential rotation*
- Modeling, observing and understanding flows and magnetic fields in the Earth's core and in the Sun, November 28-December 02, 2022, Cambridge, UK  
Poster: *Iterative helioseismic holography-Inversions on synthetics for solar interior flows*

## Teaching

Tutoring classes in physics and Mathematics:

- Mathematics: Grundlagen der Stochastik, Angewandte Statistik

- Physics: Experimentalphysik 4, Klassische Feldtheorie, Advanced lab course: Virtual Observatory, Dark Energy

### **Service to the profession**

- Organizing the buddy group at MPS 2020-2023.
- Main developer of itreg toolbox: <https://num.math.uni-goettingen.de/regpy/>.
- Main developer of Gecho-toolbox: to be published soon.