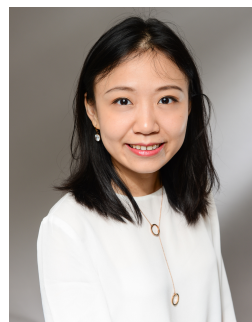


# Dr. Mengqing WU – CV

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**Address** Notkestr. 85 DESY  
22607 Hamburg, Germany  
**Date of Birth** August 10<sup>th</sup>, 1990  
**Email** wumengtsing@gmail.com  
**Languages** Chinese (Native), English (Fluent),  
French (B2), German (B1)



## Education

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- 2012 - 2015 Ph.D.** in Particle Physics - **Université Grenoble Alpes**, France  
*Thesis - Search for Supersymmetry and Dark Matter particles in the single photon final state with the ATLAS detector;*
- 2011 - 2012 M.Sc.** in Particle and Nuclear Physics - **Lanzhou University**, China  
First Class - 89% Average - Thesis exemption honour (direct to Ph.D.)  
*Simulation studies of two nuclear electronic devices*
- 2007 - 2011 B.E.** in Nuclear Technology - **Lanzhou University**, China  
First Class - 80% Average - Postgraduate exam exemption honour (direct to M.Sc.)  
*Design - Circuit design of analyzing and processing of analogue signals of the NaI detector*  
*Thesis - Research on the damage principle of cobalt-doped ZnO irradiated by fast neutrons*

## Skills

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**Programming** C/C++, Python (Pandas, Matplotlib etc), SQL, bash scripting, Assembly language;  
**DevOps** GitHub, GitLab, Bitbucket, Docker, WLCG.  
**Toolkit** Jupyter Notebook, Emacs, ROOT, Qt;  
**Others** Socket programming, Multithreading, ODBC;  
**Analytical Skills** Investigation, Communication, Strategic planning, Statistical data analysis.

## Employment/Fellowships

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- 04/2017 - Present** **Deutsches Elektronen-Synchrotron(DESY)**, Hamburg, Germany  
*AIDA-2020 Project Scientist*
- Project leader to build a beam telescope at DESY Testbeam facility
  - Project leader to build a slow control system for users at DESY Testbeam facility
  - Responsible for the software development from data acquisition to analysis framework
  - Multithreading, TCP/IP network software and Graphic user interface development
  - Integration frameworks and database definition
  - Students supervision: 1\*PhD, 1\*MPhy, 3\*BPhys, 2\*High school interns.
- 09/2018 - 10/2018** **SLAC National Accelerator Laboratory**, CA, USA  
*Visiting Scientist*
- Development of a new data acquisition system with an FPGA developer;
  - Invited for contribution to SiD detector design optimisation.

- 10/2015 - 03/2017**     **European Organization for Nuclear Research(CERN)**, Geneva, Switzerland  
*Postdoc Fellow*
- “Chung-Yao Chao” research fellow by CAS Center for Excellence in Particle Physics, Beijing
  - Coordinator for software validation of the CMS software framework CMSSW;
  - Coordinator for two physics analyses using data collected by the CMS experiment at CERN;
  - Developing python frameworks for data analyses using the data-driven approach.
- 09/2012 - 09/2015**     **Centre national de la recherche scientifique(CNRS)**, Grenoble, France  
*Research Assistant*
- Exploring and analyzing data collected by the ATLAS experiment at CERN to study new physics;
  - Software validation for the ATLAS software framework ATHENA.
  - Developing C++ frameworks for statistical data analysis.
  - Master student supervision.

## Leadership and Responsibilities

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- 02/2019 - Present**     Member of the Beam Telescope support team at DESY.
- 11/2018 - Present**     Member of the yHEP (young scientists in High Energy Physics) in Germany.
- 09/2017 - Present**     Member of the EUDAQ2 support team for the beam telescope and test beam community.
- 04/2017 - Present**     Task Leader of EU AIDA-2020 Project.
- 11/2018**                Member of the IEEE NSS-MIC 2018 Conference Information & Promotion (CIP), Sydney.
- 12/2015 - 03/2017**     Convener of the Software Release Validation group in the Physics Performance & Dataset Project (PPD) at CMS, working with 20-30 validators from various sub-detector and object performance groups.
- 02/2015 - 10/2016**     Member of the LHC Dark Matter Forum at CERN.
- Since 2013**             Numeral presentations at conferences and invited seminar talks see Publication list; about ~100 presentations within collaborations (AIDA-2020, ATLAS and CMS).

## Teaching Experience

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- 01/2019**                Hands-on tutorial on a commonly used data acquisition system and a trigger logic unit, “EUDAQ2 and AIDA TLU”, in the 7th Beam Telescopes and Test Beams Workshop at CERN.
- 07/2018**                Hands-on tutorial for summer students on “Analyzing data with ROOT framework” at DESY.
- 9/2017 - Present**     DESY FLC Group Journal Club, supervising PhD students and young Postdocs to explore various scientific papers.
- 08/2011 - 07/2012**     Teaching Assistant for undergraduates in “Introduction to Nuclear Physics” and “Engineering Drawing” courses, in Lanzhou University, China.

## Outreach

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- 12/2016 - Present**     Official CERN tour guide.
- 11/2017**                Official DESY guide in “Nacht des Wissens”.
- 11/2013**                Co-organizer of the Gezhi Forum of the Chinese Student and Researcher Union in Grenoble, France. This is a forum aiming at sharing state-of-art knowledge in between different Scientific fields.
- 02/2010**                Member of the local organizer team in Lanzhou for the 6th joint meeting of Chinese physicists worldwide (OCPA6) - International Conference on Physics Education and Frontier Physics Research.

## Awards and Honors

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- **2018** Performance award for superb and outstanding work in detector development, DESY, Germany
- **2016-2017** Chung-Yao Chao Fellowship, CAS Center for Excellence in Particle Physics, China
- **09/2015** Best poster award at 35<sup>th</sup> Physics in Collision, Coventry, UK
- **2012-2015** National Scholarship for Overseas Ph.D., Chinese Scholarship Council, China
- **2011-2012** First Class Research Assistant Grant, Lanzhou University, China
- **2011-2012** First Class Master Scholarship, Lanzhou University, China
- **2008-2009** Outstanding Student Union Leader, Lanzhou University, China
- **2008-2009** Outstanding Radio Programme Director, Lanzhou University, China
- **09/2008** Outstanding Summer Social Practice Team, Lanzhou University, China

## Publications with major contributions

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- Y. Liu et al, EUQA2 – A Flexible Data Acquisition Software Framework for Common Test Beams, 10.1088/1748-0221/14/10/P10033
- M. Wu et al, “Development of a large active area beam telescope based on the SiD microstrip sensor”, *NIMA* (2019), 10.1016/j.nima.2019.162864
- The ATLAS/CMS Dark Matter Forum, “Dark Matter Benchmark Models for Early LHC Run-2 Searches: Report of the ATLAS/CMS Dark Matter Forum”, *Physics of the Dark Universe* (2019), 10.1016/j.dark.2019.100371
- M. Wu et al, “Lycoris: A large area beam telescope based on hybrid-less strip silicon sensor”, 2018 IEEE NSS/MIC Conference Proceedings, 10.1109/NSSMIC.2018.8824667
- U. Kraemer, D. Tsionou, M. Stanitzki and M. Wu, “LYCORIS - A Large Area Strip Telescope”, International Workshop on Future Linear Colliders (LCWS2017) Proceedings, *arXiv*: 1801.08505[physics.ins-det]
- The CMS Collaboration, “Search for new diboson resonances in the dilepton + jets final state at  $\sqrt{13}$  TeV with 2016 data”, CMS-PAS-HIG-16-034, Preliminary Result (*\* I am one of the authors of its corresponding internal note, but not sure for the CMS authorship status at that time.*)
- WU, Mengqing, “Dark matter searches with the ATLAS detector”, conference proceeding for the 35<sup>th</sup> International Symposium on Physics in Collision (PIC 2015), ATL-PHYS-PROC-2015-153 (2015)
- WU, Mengqing, “Search for Supersymmetry and Dark Matter particles in the single photon final state with the ATLAS detector”, PhD thesis, CERN-THESIS-2015-122
- The ATLAS Collaboration, “Search for new phenomena in events with a photon and missing transverse momentum in  $pp$  collisions at  $\sqrt{s} = 8$  TeV with the ATLAS detector”, *Physics Review D* (2015), 10.1103/PhysRevD.91.012008
- The ATLAS Collaboration, “Search for new phenomena in events with a photon and missing transverse momentum in  $pp$  collisions at  $\sqrt{s} = 8$  TeV with the ATLAS detector”, ATLAS-CONF-2014-051, Preliminary Result

## Project Report, Technical Notes, Internal Notes

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- M. Wu, “Silicon strip reference tracker at DESY”, EU project AIDA-2020 Deliverable Report, AIDA-2020-D15.2
- M. Wu, “Environmental control system at DESY”, EU project AIDA-2020 Deliverable Report, AIDA-2020-D15.3
- M. Wu and F. Lars, “User Manual Slow Control System”, EU Project AIDA-2020 Scientific/Technical Note, AIDA-2020-NOTE-2019-005

- M. Wu, “User Manual of the environmental control system at DESY”, EU Project AIDA-2020 Scientific/Technical Note, AIDA-2020-NOTE-2017-007
- Leonardo Carminati, Donatella Cavalli, Marie-Helene Genest, Valerio Ippolito, Lashkar Kashif, Marta Perego, Caterina Pizio, Maria Giulia Ratti, Silvia Resconi, Chase Shimmin, Fuquan Wang, Mengqing Wu, Sau Lan Wu and Ning Zhou, “Search for new phenomena with the ATLAS detector in monophoton events from proton proton collisions at  $\sqrt{s} = 8$  TeV”, ATL-PHYS-INT-2014-036, ATLAS Internal Note.
- S. Ahuja et al, “Search for new diboson resonances in the dilepton + jets final state at  $\sqrt{s} = 13$  TeV with 2016 data.”, CMS-AN-2016/206, CMS Internal Analysis Note;
- Mingshui Chen, Tongguang Cheng, Brad Cox, Bob Hirosky, Hengne Li, Yanchu Wang, Mengqing Wu, and Fan Xia, “Search for new ZZ resonances in two leptons two neutrinos final states at 13 TeV”, CMS-AN-2015/317, CMS Internal Analysis Note;

## Presentations

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### Conference

“Development of a large active area beam telescope based on the SiD micro-strip sensor”, *15th Vienna Conference on Instrumentation (VCI2019)*, Vienna, Austria, 18-22 February 2019.

**Published presentation:** AIDA-2020-POSTER-2019-001

“The LYCORIS Telescope at the DESY II Test Beam Facility”, *7th Beam Telescopes and Test Beams Workshop (BTTB7)*, Zurich, Switzerland, 14-18 January 2019.

**Published presentation:** AIDA-2020-SLIDE-2019-005

“LYCORIS: A large area beam telescope based on hybrid-less strip silicon sensor”, *2018 IEEE Nuclear Science Symposium and Medical Imaging Conference (IEEE2018 NSS/MIC)*, Sydney, Australia, 10-17 November 2018.

**Published presentation:** AIDA-2020-POSTER-2019-002

“LYCORIS, a large area strip telescope for the DESY test beam”, *Asian Linear Collider Workshop 2018 (ALCW2018)*, Fukuoka, Japan, 28 May - 1 June 2018.

**Published presentation:** AIDA-2020-SLIDE-2019-004

“TPC R&D activities at DESY”, *Asian Linear Collider Workshop 2018 (ALCW2018)*, Fukuoka, Japan, 28 May - 1 June 2018.

“Development of a large area strip telescope for the DESY II Testbeam Facility”, *6th Beam Telescopes and Test Beams Workshop (BTTB6)*, Zurich, Switzerland, 16-19 January 2018.

**Published presentation:** AIDA-2020-SLIDE-2018-004

“Environmental slow control system for the DESY II Testbeam Area”, *6th Beam Telescopes and Test Beams Workshop (BTTB6)*, Zurich, Switzerland, 16-19 January 2018.

**Published presentation:** AIDA-2020-SLIDE-2018-005

“Experimental results on di-photon, ZZ and WW resonances from ATLAS and CMS”, *QCD@LHC2016*, Zurich, Switzerland, 22-26 August 2016. (**Selected** by CMS, on behalf of the ATLAS and the CMS collaborations)

“Dark matter searches with the ATLAS detector”, *35<sup>th</sup> International Symposium on Physics in Collision (PIC 2015)*, Coventry, UK, 15-19 September 2015. (**Selected** by ATLAS, on behalf of the ATLAS collaboration)

### Workshop & Annual Meeting

“Status of Si tracker DAQ”, *AIDA-2020 Fourth Annual Meeting*, Oxford, UK, 2-5 April 2019.

“WP15.3 - Improvements of the DESY test beam infrastructure: D15.2 Status”, *AIDA-2020 Fourth Annual Meeting*, Oxford, UK, 2-5 April 2019.

“A hybrid-less Strip Telescope for the DESY II Test Beam Facility”, *Matter and Technologies (MT) Programme Fifth Annual Meeting*, Jena, Germany, 5-7 March 2019. **Published presentation:** AIDA-2020-SLIDE-2019-006

“Development of a beam telescope based on a hybrid-less micro-strip sensor”, *Matter and Technologies (MT) Programme Fifth Annual Meeting*, Jena, Germany, 5-7 March 2019. **Published presentation:** AIDA-2020-

POSTER-2019-004

“Silicon tracker integration”, in the session of “WP5: Data acquisition system for beam tests”, *AIDA-2020 Third Annual Meeting*, Bologna, Italy, 24-27 April 2017.

“WP15.3 Improvements of the DESY test beam infrastructure”, in the session of “WP15: Upgrade of beam and irradiation test infrastructure”, *AIDA-2020 Third Annual Meeting*, Bologna, Italy, 24-27 April 2017.

“Search for new physics in monophoton final state using 20.3fb-1 of 8TeV ATLAS Data”, *Workshop Physique ATLAS France 2014 (PAF 2014)*, Puy-en-Velay, France, 24-26 November 2014. (**Selected** PhD student talk)

“Search for new phenomena in events with a photon and missing transverse momentum in  $pp$  collisions at  $\sqrt{s} = 8$  TeV with the ATLAS detector” *ATLAS Week – Poster Session*, CERN, Geneva, Switzerland, 6-10 October 2014.

“Compress squark and dark matter studies”, *7th France China Particle Physics Laboratory Workshop (FCPPL 2014)*, Clermont-Ferrand, France, 8-10 April 2014. (**Selected** PhD student talk)

## Seminar

“Introduction to the DESY Test Beam infrastructure and its New Improvements”, **Invited** Seminar at the School of Information Science and Technology of ShanghaiTech Univeristy, Shanghai, China, 25 May 2018.

“A large area strip silicon telescope at DESY test beam”, **Invited** Seminar at the 277<sup>th</sup> Department Engineering Physics Forum, Tsinghua University, Beijing, China, 24 May 2018.

“Introduction to Dark Matter Searches with the ATLAS detector at LHC”, **Invited** Seminars at Tsinghua University Department of Physics, Beijing, China, 9 October 2015.

“The monophoton analysis in the ATLAS experiment”, *Ph.D. Seminar*, LPSC Grenoble, France, 10 June 2014.

“Search for Supersymmetry and Dark Matter - Data analysis based on the ATLAS experiment at LHC”, *Ph.D. Seminar*, The School of Nuclear Science and Technology, Lanzhou University, Lanzhou, China, 18 December 2013.

“Higgs Hunter - Introduction to the Physics Nobel Prize 2013”, *2nd Gezhi Forum*, Chinese Student and Researcher Union (UCECF), Grenoble, France, 30 November 2013.