

Dept. of Physics & Astronomy,
University of Utah,
Salt Lake City, UT
Department of Physics,
Sungkyunkwan University,
Suwon, Korea



RESEARCH FOCUS	Experimental astroparticle physics, Neutrino physics, Particle physics
LANGUAGES	Fluent: German, English; Basic: French, Japanese, and Korean
EMPLOYMENT	
	2021 – present Professor / Jack W. Keuffel Memorial Chair, University of Utah, USA
	2017 – present Associate Professor, Sungkyunkwan University, Korea
	2017 Honorary Fellow at Wisconsin IceCube Particle Astrophysics Center (WIPAC) (Sabbatical), University of Wisconsin Madison, USA
	2013 – 2017 Assistant Professor, Sungkyunkwan University, Korea
	2016 Visiting Researcher (3-month), University of Tokyo, Japan
	2009 – 2013 Senior Fellow of the Center for Cosmology and AstroParticle Physics (CCAPP) (5-year term), The Ohio State University, USA
	2008 – 2009 CCAPP Fellow (3-year term), The Ohio State University, USA
	2005 – 2008 Postdoctoral Fellow, Pennsylvania State University, USA
EDUCATION	
	1998 – 2004 Purdue University, Indiana, USA Ph.D in Experimental Particle Physics (December 2004) Title : “Search for Scalar Bottom Quarks from Gluino Decays” at CDF Thesis Adviser : Prof. Daniela Bortoletto
	1995 – 1998 Universität Hannover, Hannover, Germany
PROFESSIONAL ACTIVITIES	
	2018 – present Chair of JSNS ² Speakers Board & Member of Inst. Board / Common Fund Oversight Committee / Spokesperson Election Committee
	2018 – 2022 IceCube Publication Committee
	2018 – 2021 Hyper-Kamiokande International Board Representative (IBR)
	2015 – 2018 IceCube Speaker Selection Committee Member
	2013 – 2019 IceCube Beyond Standard Model Working Group Co-Lead
	2012 – 2013 IceCube Dark Matter Working Group Co-Lead
	2011 – present IceCube Collaboration Institutional Board Member
	2011 – present Manuscript referee for PRL, PRD, PLB, JCAP, EPJC, Dark Universe
	2008 – 2009 Elected as IceCube Early Career Scientist Representative
HONORS AND AWARDS	
	2021 Bruno Rossi Prize (as IceCube Member)
	2011 Recipient of NSF Antarctica Service Medal
	2009 CCAPP Senior Fellowship
	2005 “Fermilab’s Result of the Week” (FermiNews, August 11, 2005)
	2004 George W. Tautfest Award, Purdue University
	1998 University of Hannover – Purdue University direct exchange fellowship

FUNDS AND

GRANTS

2022 – 2023	NSF Telescope Array Analysis (Co-I) \$310K – NSF-2209584
2022 – 2023	NSF NuFact Conference Support (PI) \$5K – NSF-2217792
2020 – 2025	NRF Midscale Type-2 Research (PI), Korea – NRF-2020R1A2C3008356
2020 – 2023	Foreign Facility Fund (Co-I) – NRF-2020K1A3A7A09080128
2017 – 2020	Foreign Facility Fund (PI of 7 sub-PIs) – NRF-2017K1A3A7A09015973
2017 – 2020	NRF Midscale Research Fund (PI), Korea – NRF-2017R1A2B2003666
2016 – 2019	NRF SRC Korea Neutrino Research Center (KNRC) (Co-I), Korea
2016 – 2017	NRF Individual Researcher (PI), Korea – NRF-2016R1D1A1B03931688
2013 – 2016	NRF Individual Researcher (PI), Korea – NRF-2013R1A1A1007068
2013 – 2014	SKKU Intramural Faculty Fund Award, Korea
2013 – 2014	NASA Fermi GI Cycle 6 (Co-I with Prof. A. Peter (OSU)), USA
2011 – 2012	PI - NSF Award #1135622, USA

PUBLICATION

SUMMARY

- Publication statistics according to Inspire: **318 published papers, 41,588 citations** in total, **h-index = 94** (more details in attached publication list) (latest summary)
 - Publications as corresponding author: 16
 - Collaboration publications as working group leader or chair of internal review committee: 14
 - Few author papers as co-author & internal referee: 38
 - Proceedings: 30
 - Collaboration publications as co-author: 261
 - Very high impact journals (Nature or Science): 7 (including 4 since 2018)

PRESENTATIONS

SUMMARY

- Conference organization: 31
- Invited talks at international conferences: 68 (Review talks 12)
- Invited colloquia and seminars: 89
- Contributed talks at conferences: 44

SUPERVISION

- As thesis advisor
 - PhD Theses: 6 (2 completed)
 - Master Theses: 6 (4 completed)
 - BA Theses: 8 (6 completed)
- As thesis co-advisor or working group leader
 - PhD Theses: 15

MEMBER OF COLLABORATIONS

- IceCube Neutrino Observatory (2005 – present)
 - Dark Matter & BSM Physics analyses, solar atmospheric neutrinos, publication committee, Upgrade calibration (lead cameras systems).
- JSNS2 (2017 – present)
 - Speakers committee chair, common fund oversight committee, Korean group fund (PI), event reconstructions, data analysis.
- Hyper-Kamiokande (2011 – present)
 - International board representative (IBR), Photon traps designs, sensitivity studies (dark matter, mass hierarchy and δ_{CP} measurement with 2nd detector in Korea)
- COSINE-100 (2014 – present)
 - Detector simulations, internal paper referee

POSTDOCS

- Postdocs (Present):
 - Steven Rodan (2021 – present)
 - Christoph Toennis (2017 – present) (SKKU Science Fellow 2019–2022)
- Postdocs (Alumni):
 - Hyoungku Jeong (2022 – 2023)
 - Koun Choi (2020 – 2021) (Now Young Science Fellow at IBS)
 - Nafis Chowdhury (2021)
 - Debanjan Bose (2013 – 2017) (Now Ramanujan Fellow at IIT)

THESIS ADVISER

- Graduate Students (Present):
 - Jiwoong Lee (2020 – present) (MS)
 - Gyunho Yu (2018 – present) (Ph.D.)
 - Woosik Kang (2015 – present) (Ph.D.)
 - Minjin Jeong (2014 – present) (Ph.D.)
- Bachelor Students (Present):
 - Minji Seo (2022 – present)
 - Yubin Oh (2022 – present)
 - Na Young Jeon (2020 – present)
- Ph.D. Students (Alumni):
 - Hyoungkoo Jeon (2017 – 2022) (Ph.D. 2022)
 - Hrvoje Dujmovic (2015 – 2019) (Ph.D. Feb 2019) Search for Heavy Decaying Dark Matter with IceCube (published in *Eur.Phys.J. C78* (2018) no.10, 831)
 - Seongjin In (2013 – 2020) Search for Solar Atmospheric Neutrinos with the IceCube Neutrino Telescope (submitted to JCAP [arxiv:1912.13135](https://arxiv.org/abs/1912.13135)) (Awarded NRF Global Ph.D. Fellowship (GPF) NRF- 2015H1A2A103236)
- Master Students (Alumni):
 - Gerrit Rollinghoff (2019 – 2021) (MS) – Search for Solar Atmospheric Neutrinos with IceCube
 - Lilly Peters (2020 – 2022) (MS) (co-supervise with RWTH Aachen)
 - Dongyoung Jeong (2017 – 2018) (Master Degree Feb 2019) – Solar Dark matter sensitivity for LAr based neutrino detectors (published in JCAP [1907](https://arxiv.org/abs/1907.006) (2019) 006)
 - Jonghyun Kim (2016 – 2018) (Master Degree July 2018) – A camera system for IceCube
 - Myoungchul Kim (2014 – 2017) (Master Degree Feb 2017) – Lab measurements for PINGU Camera Sensitivity
 - Gayeon Song (2016 – 2017) (Master Degree Feb 2017) – SUSY Model Scans for Dark Matter Searches from the Sun

- Bachelor Students (Alumni):
 - Danim Kim (2020 – 2021) – Spice core camera analysis
 - Jong Hoon Joon (2019) – Evaluation of LEDs for the IceCube Upgrade Camera Illumination Board
 - Daehwan Kim (2017)– Background Simulations for the COSINE-100 Dark Matter Search Experiment
 - Seokmin Choi (2016 – 2017) – Evaluation of CMOS Cameras for ice property studies
 - Gyunho Yu (2016 – 2017)– Measurements of photo response of a Wavelength Shifting Optical Module
 - Jonghyun Kim (2014 – 2016) – Design of a CCD Camera System for PINGU
 - Woosik Kang (2014 – 2015) – GEANT4 Simulation studies to determine scattering length with a Camera for IceCube

SUPERVISION OF STUDENT PROJECTS

- Research supervision as working group leader:
 - Ph.D. IceCube: Anna Steuer (Mainz), Jan Lünemann (Mainz), Ward Van Driessche (Gent) , Samuel Flis (Stockholm), Martin Wolf (Stockholm) , Morten Medici (NBI) , James Pepper (Alabama), Marcel Zoll (Stockholm) , Mohamed Rameez (Geneva) , Jan Kunnen (Brussels), Meike de With (Berlin/DESY Zeuthen), Rene Reimann (Aachen), Emanuel Jacobi (DESY) , Sandro Kopper (Wuppertal) , Sebastian Schönen (Aachen), Martin Bissok (Aachen), Shivesh Mandalia (Queen Mary) , Kareem Farrag (Queen Mary), Chaimae El Aisati (ULB).
 - MS IceCube: Joeran Stettner (Aachen), Oscar Macias (Canterbury).

MEMBERSHIP

- Korean Astronomical Society KAS (since 2019)
- American Geophysical Union AGU (since 2016)
- Korean Physical Society KPS (since 2013)
- American Physical Society APS (since 2001)