Curriculum Vitae

Julia Gehrlein

Personal Data

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Academic Positions

Since Sep 2019	Research Associate at the High Energy Theory group at BNL
Sep 2016-Aug 2019	PhD student at the IFT, UAM-CSIC, Madrid, Spain Junior Early Stage Researcher at the ITN Marie Curie *Elusives*
Nov 2015-Aug 2016	Master Student in Physics at the Institute for Theoretical Particle Physics, KIT, Karlsruhe, Germany
Jun 2014-Jul 2015	Research student at the Institute for Theoretical Particle Physics, KIT, Karlsruhe, Germany
Apr 2014-Jun 2014	Bachelor student in Physics at the Institute for Theoretical Particle Physics, KIT, Karlsruhe, Germany

Education

June 2019	PhD in Physics
Aug 2016	Master of Science in Physics
Oct 2014-Aug 2016	Master Student in Physics at the KIT, Karlsruhe, Germany
Sept 2014	Bachelor of Science in Physics
Oct 2011-Sept 2014	Studies of Physics at the KIT, Karlsruhe, Germany
Mar 2011	High school degree ("Abitur")

Scholarships

2016	Junior Early Stage Researcher fellowship in the Marie Curie ITN *Elusives* (100.000 € over 3 years)
2015	DESY Summer Student fellowship of 2100 €

Travel awards

2019	Travel award of 1100 $ to spend three weeks at Fermilab, USA
2018	Travel award of 600 € to attend Moriond Electroweak, La Thuile, Italy
2017	Travel award of 2000 € to spend one week at KTH Stockholm, Sweden
2016	Travel award of 250 € to attend the DPG Spring Meeting, Hamburg, Germany
2015	Travel award of 250 € to attend the DPG Spring Meeting, Wuppertal, Germany

Research Stays

Aug 2019	Research stay at Fermilab, USA Host: Stephen Parke
Feb 2019	Invited research stay at LPTHE Paris, France Host: Kalliopi Petraki
Feb-May 2018	Research stay at University Heidelberg, Germany Host: Jörg Jäckel
Jun-Sept 2017	Internship at GMV, Madrid, Spain Host: Ana Maria Curiel
Mar-May 2017	Research stay at Fermilab, USA Host: Stephen Parke
Jan 2017	Research stay at the KTH, Stockholm, Sweden Host: Mattias Blennow
Jul-Sep 2015	DESY Summer Student Programme, at DESY, Hamburg, Germany Supervisors: Georg Weiglein, Emanuele Bagnaschi

Computing skills

Mathematica, LaTeX, C/ C++, Python, Feynrules, Madgraph, Madanalysis, nuSQuIDS, MultiNest, Armadillo

Teaching Experience as Teaching Assistant

Summer Term 2015	Theoretical Mechanics I
Winter Term 2015/2016	Theoretical Quantum Mechanics II

Further activities

Since 2020	Organizer of the neutrino journal club at BNL
2018	Member of the Junior organisation committee for BLV 2019 in Madrid
Since 2018	Reviewer for EPJC, PRD
Sep 2017-Aug 2019	In charge of the Pheno-Coffee (journal club) at the IFT
Sep 2017-Aug 2019	Filming of various videos for the outreach project *IFT responde* What is particle decay?, Matter-Antimatter annihilation, Why does light take so long to exit the Sun whereas neutrinos can escape easily?, Why is the weak force weak?
Sep 2016-Aug 2019	Author of various articles for the outreach section of the *Elusives* homepage Baryogensis and Dark Matter from B-mesons, DAMPE: a spectral break and a new excess in the TeV spectrum of cosmic-ray electrons and positrons, The Radial Acceleration Relation in Rotationally Supported Galaxies
Sep 2016-Aug 2019	In charge of the *Invisibles+* and *Elusives* Webinar at the IFT

Memberships

Member	German Physical Society, Brookhaven Women in Science, Graduate Women in Science

List of Publications

Julia Gehrlein

Peer-reviewed articles

citations on Inspire (Feb 2020): 329

[*A*13] *A testable hidden-sector model for Dark Matter and neutrino masses*
Julia Gehrlein and Mathias Pierre,
40 pp. JHEP02 (2020) 068. Preprint: arXiv:1912.06661 [hep-ph].

[*A*12] *Very Light Asymmetric Dark Matter*
Gonzalo Alonso-Álvarez, Julia Gehrlein, Joerg Jaeckel and Sebastian Schenk,
32 pp. JCAP **1909**, 003 (2019). Preprint: arXiv:1906.00969 [hep-ph].

[*A*11] *Biνo phenomenology at the LHC*
Julia Gehrlein, Seyda Ipek and Patrick J. Fox,
18 pp. JHEP **1903**, 073 (2019). Preprint: arXiv:1901.09284 [hep-ph].

[*A*10] *Natural and Dynamical Neutrino Mass Mechanism at the LHC*
Julia Gehrlein, Dorival Gonçalves, Pedro A. N. Machado and Yuber F. Perez-Gonzalez,
9 pp. Phys. Rev. D **98**, no. 3, 035045 (2018). Preprint: arXiv:1804.09184 [hep-ph].

[*A*9] *IceCube bounds on sterile neutrinos above 10 eV*
Mattias Blennow, Enrique Fernandez-Martinez, Julia Gehrlein, Josu Hernandez-Garcia and Jordi Salvado,
20 pp. Eur. Phys. J. C **78**, no. 10, 807 (2018). Preprint: arXiv:1803.02362 [hep-ph].

[*A*8] *Dark Matter and the elusive Z' in a dynamical Inverse Seesaw scenario*
Valentina De Romeri, Enrique Fernandez-Martinez, Julia Gehrlein, Pedro A. N. Machado and Viviana Niro,
21 pp. JHEP **1710**, 169 (2017). Preprint: arXiv:1707.08606 [hep-ph].

[*A*7] *Neutrino Mass Sum Rules and Symmetries of the Mass Matrix*
Julia Gehrlein and Martin Spinrath,
10 pp. Eur. Phys. J. C **77**, no. 5, 281 (2017). Preprint: arXiv:1704.02371 [hep-ph].

[*A*6] *Renormalisation Group Corrections to Neutrino Mixing Sum Rules*
Julia Gehrlein, Serguey T. Petcov, Martin Spinrath and Arsenii V. Titov,
42 pp. Published in JHEP **1611** (2016) 146. Preprint: arXiv:1608.08409 [hep-ph].

[*A*5] *On the Predictivity of Neutrino Mass Sum Rules*
Julia Gehrlein, Alexander Merle and Martin Spinrath,
30 pp. Published in Phys. Rev. D **94** (2016) no.9, 093003.
Preprint: arXiv:1606.04965 [hep-ph].

[*A*4] *Leptogenesis in an SU(5) $\times$ A_5 Golden Ratio Flavour Model: Addendum.*
Julia Gehrlein, Serguey T. Petcov, Martin Spinrath and Xinyi Zhang,
15 pp. Published in Nucl. Phys. B **899** (2015) 617. Preprint: arXiv:1508.07930 [hep-ph].

[*A*3] *Renormalisation Group Corrections to Neutrino Mass Sum Rules.*
Julia Gehrlein, Alexander Merle and Martin Spinrath,
25 pp. Published in JHEP **1509** (2015) 066. Preprint: arXiv:1506.06139 [hep-ph].

[*A*2] *Leptogenesis in an SU(5) $\times$ A_5 Golden Ratio Flavour Model.*
Julia Gehrlein, Serguey T. Petcov, Martin Spinrath and Xinyi Zhang,
22 pp. Published in Nucl. Phys. B **896** (2015) 311. Preprint: arXiv:1502.00110 [hep-ph].

[*A*1] *An SU(5) × A_5 Golden Ratio Flavour Model.*
Julia Gehrlein, Jens P. Oppermann, Daniela Schäfer and Martin Spinrath,
34 pp. Published in Nucl. Phys. B **890** (2015) 539. Preprint: arXiv:1410.2057 [hep-ph]

Conference proceedings

[*P*1] *Inverse Seesaw from dynamical $B - L$ breaking*
Julia Gehrlein,
4 pp. Proceedings Moriond 2018-Electroweak session. Preprint: arXiv:1805.04730 [hep-ph].

List of Presentations

Julia Gehrlein

Seminar Talks

upcoming: Jun 2020	**Invited** seminar at Fermilab
Nov 2019	*Neutrino Windows to new physics,* HET lunch seminar at BNL
Feb 2019	*Natural and dynamical neutrino mass model at the LHC,* **Invited** seminar at LPTHE Paris
Dec 2018	*IceCube bounds on sterile neutrinos above 10 eV,* **Invited** Webinar for N3AS network
Nov 2018	*Natural and dynamical neutrino mass model at the LHC,* **Invited** *Elusives* Student Webinar
May 2018	*Cosmic neutrino background,* PhD seminar at University of Heidelberg
Feb 2017	*Corrections to Leptonic sum rules,* PhD seminar at the IFT, Madrid
Jan 2017	*Corrections to Leptonic sum rules,* **Invited** *Elusives* Student Webinar
May 2016	*Leptonic sum rules,* Institute Seminar, KIT
Dec 2015	*Sum rules for lepton flavor observables,* **Invited** Seminar: B-Lunch (joint theorists and experimentalists seminar), KIT
Oct 2015	*Neutrino mass and angle sum rules,* Seminar: Flavour and Supersymmetry (Group Seminar), KIT
May 2015	*Leptogenesis,* Institute Seminar, KIT
Apr 2015	*The 8×8-fold way,* Seminar: Flavour and Supersymmetry (Group Seminar), KIT
Nov 2014	*SU(5) as a GUT,* Seminar: Flavour and Supersymmetry (Group Seminar), KIT
Jul 2014	*An SU(5)×A_5 Flavour Model – Phenomenology,* **Invited** Bachelor-Workshop at the Institute for Theoretical Particle Physics, KIT
Jun 2014	*Spontaneous Symmetry breaking,* Advanced students seminar: Theoretical and experimental methods in particle physics, KIT

Conference Talks

Sep 2019	*IceCube bounds on sterile neutrinos above 10 eV,* BNL Forum 2019, Brookhaven National Laboratory
Sep 2018	*IceCube bounds on sterile neutrinos above 10 eV,* Invisibles18 Workshop, Karlsruhe
May 2018	*IceCube bounds on sterile neutrinos above 10 eV,* Planck 2018, Bonn
Mar 2018	*Dynamical Inverse Seesaw,* Moriond-Electroweak 2018, La Thuile
Jun 2017	*Dynamical Inverse Seesaw,* Invisibles17 Workshop, Zurich
Feb 2016	*Corrections to Neutrino Mass Sum Rules,* DPG Spring Meeting, Hamburg
Mar 2015	*Sum Rules in Flavour Models,* DPG Spring Meeting, Wuppertal