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教育和科研经历

- 2020–现在 博士后(洪堡学者)
 马普核物理所 粒子与天体粒子物理中心 · 德国 📍
 合作教授: Werner Rodejohann 和 Manfred Lindner 
- 2015–2020 博士
 中科院 高能物理所 理论物理室 · 北京 📍
 导师: 周顺研究员 
 学位论文: 中微子的质量起源和基本性质
- 2011–2015 学士
 武汉大学 物理科学与技术学院 · 武汉 📍
 指导老师: 张振宇 
 学位论文: 衰变道 $\psi(2S) \rightarrow \chi_{c_j} + e^+ + e^-$ 螺旋振幅的研究

论文

已发表

- ① **Guo-yuan Huang***: “Double and multiple bangs at tau neutrino telescopes: A novel probe of sphalerons with cosmogenic neutrinos”, *Eur. Phys. J. C* 82 (2022) 1089 (SCI T1, IF=4.6)
- ② **Guo-yuan Huang**, M. Lindner, M. Sen* and P. Martínez-Miravé: “Cosmology-friendly time-varying neutrino masses via the sterile neutrino portal”, *Phys. Rev. D* 106 (2022) 033004 (SCI T1, IF=5.3)
- ③ **Guo-yuan Huang*** and N. Nath: “Inference of neutrino nature and Majorana CP phases from $0\nu\beta\beta$ decays with inverted mass ordering”, *Eur. Phys. J. C* 82 (2022) 838 (SCI T1, IF=4.6)
- ④ **Guo-yuan Huang** and N. Nath*: “Neutrino meets ultralight dark matter: $0\nu\beta\beta$ decay and cosmology”, *JCAP* 05 (2022) 034 (SCI T1 for JCR, not included in WUT’s journal list, IF=7.28)
- ⑤ **Guo-yuan Huang**, S. Jana*, F. S. Queiroz and W. Rodejohann: “Probing the $R_{K^{(*)}}$ anomaly at a muon collider”, *Phys. Rev. D* 105 (2021) 015013 (SCI T1, IF=5.3)
- ⑥ **Guo-yuan Huang*** and S. Zhou: “Discriminating between thermal and nonthermal cosmic relic neutrinos through an annual modulation at PTOLEMY”, *Phys. Rev. D* 94 (2016) 116009 (SCI T1, IF=5.3)
- ⑦ **Guo-yuan Huang*** and W. Rodejohann: “Solving the Hubble tension without spoiling Big Bang Nucleosynthesis”, *Phys. Rev. D* 103 (2021) 123007 (SCI T1, IF=5.3)
- ⑧ **Guo-yuan Huang***, F. S. Queiroz and W. Rodejohann: “Gauged $L_\mu - L_\tau$ at a muon collider”, *Phys. Rev. D* 103 (2021) 095005 (SCI T1, IF=5.3)
- ⑨ **Guo-yuan Huang*** and S. Zhou: “Tentative sensitivity of future $0\nu\beta\beta$ -decay experiments to neutrino masses and Majorana CP phases”, *JHEP* 03 (2021) 084 (SCI T1, IF=6.38)
- ⑩ **Guo-yuan Huang*** and S. Zhou: “Precise Values of Running Quark and Lepton Masses in the Standard Model”, *Phys. Rev. D* 103 (2021) 016010 (SCI T1, IF=5.3)
- ⑪ **Guo-yuan Huang*** and N. Nath: “RGE-induced $\mu - \tau$ symmetry breaking: an analysis of the latest T2K results”, *Eur. Phys. J. C* 80 (2020) 914 (SCI T1, IF=4.6)
- ⑫ **Guo-yuan Huang** and Q. Liu*: “Hunting the Glashow Resonance with PeV Neutrino Telescopes”, *JCAP* 03 (2020) 005 (SCI T1 for JCR, not included in WUT’s journal list, IF=7.28)
- ⑬ **Guo-yuan Huang***, W. Rodejohann and S. Zhou: “Effective neutrino masses in KATRIN and future tritium beta-decay experiments”, *Phys. Rev. D* 101 (2020) 016003 (SCI T1, IF=5.3)
- ⑭ J. Cao, **Guo-yuan Huang**, Y. F. Li, Y. Wang, L. J. Wen, Z. Z. Xing, Z. H. Zhao and S. Zhou*: “Towards the meV limit of the effective neutrino mass in neutrinoless double-beta decays”, *Chin. Phys. C* 44 (2020) 031001 (SCI T1, IF=2.1)
- ⑮ **Guo-yuan Huang***, N. Sasao, Z. Z. Xing and M. Yoshimura: “Testing unitarity of the 3×3 neutrino mixing matrix in an atomic system”, *Int. J. Mod. Phys. A* 35 (2020) 2050004 (SCI T3 for JCR, not included in WUT’s journal list, IF=1.4)
- ⑯ **Guo-yuan Huang*** and S. Zhou: “Probing cosmic axions through resonant emission and absorption in atomic systems with superradiance”, *Phys. Rev. D* 100 (2019) 035010 (SCI T1, IF=5.3)

- ①7 **Guo-yuan Huang*** and S. Zhou: “Impact of an eV-mass sterile neutrino on the neutrinoless double-beta decays: A Bayesian analysis”, Nucl. Phys. B 945 (2019) 114691 (SCI T1, IF=2.8)
- ①8 **Guo-yuan Huang*** and S. Zhou: “Constraining neutrino lifetimes and magnetic moments via solar neutrinos in the large xenon detectors”, JCAP 02 (2019) 024 (SCI T1 for JCR, not included in WUT’s journal list, IF=7.28)
- ①9 **Guo-yuan Huang*** and N. Nath: “Neutrinophilic axion-like dark matter”, Eur. Phys. J. C 78 (2018) 922 (SCI T1, IF=4.6)
- ②0 **Guo-yuan Huang**, Z. z. Xing and J. y. Zhu*: “Correlation of normal neutrino mass ordering with upper octant of θ_{23} and third quadrant of δ via RGE-induced μ - τ symmetry breaking”, Chin. Phys. C 42 (2018) 123108 (SCI T1, IF=2.1)
- ②1 **Guo-yuan Huang***: “Sterile neutrinos as a possible explanation for the upward air shower events at ANITA”, Phys. Rev. D 98 (2018) 043019 (SCI T1, IF=5.3)
- ②2 **Guo-yuan Huang***, J. H. Liu and S. Zhou: “Matter effects on the flavor conversions of solar neutrinos and high-energy astrophysical neutrinos”, Nucl. Phys. B 931 (2018) 324 (SCI T1, IF=2.8)
- ②3 **Guo-yuan Huang**, T. Ohlsson and S. Zhou*: “Observational constraints on secret neutrino interactions from big bang nucleosynthesis”, Phys. Rev. D 97 (2018) 075009 (SCI T1, IF=5.3)

会议文集

- ① **Guo-yuan Huang**, Z. z. Xing and J. y. Zhu*: “Spontaneous μ - τ Reflection Symmetry Breaking in Neutrino Phenomenology”, Universe 4 (2018) 141 (SCI T3 for JCR, not included in WUT’s journal list)

研究领域

主要研究方向是粒子物理理论和唯象学，专注于中微子物理及其与天体物理、宇宙学等的交叉研究。

长期担任国际期刊 Physical Review D, Nuclear Physics B, Chinese Physics C, Journal of Cosmology and Astroparticle Physics 的审稿人。

参与过的基金项目

- 2020 德国洪堡研究基金
- 2021 国家自然科学基金面上项目, 12075254, 参与
- 2018 国家自然科学基金面上项目, 11775231, 参与

学术会议

- 2023 LHAASO SYMPOSIUM · Chengdu 📍
报告: **Probing the Glashow resonance and beyond with ultrahigh energy neutrino telescopes**
- 2023 GRAND COLLABORATION WEEK · Nijmegen 📍
报告: **New physics signatures at future neutrino telescopes observing air showers**
- 2022 THE 27TH INTERNATIONAL SYMPOSIUM ON PARTICLES, STRINGS AND COSMOLOGY · 海德堡 📍
报告: **New physics potential of future tau neutrino telescopes**
- 2022 NEUTRINO · 首尔 📍
- 2022 56TH RENCONTRES DE MORIOND · 拉蒂勒 📍
报告: **Probing new physics at future tau neutrino telescopes**
- 2021 TeV PARTICLE ASTROPHYSICS · 成都 📍
报告: **Probing new physics at future tau neutrino telescopes**
- 2019 THE 8TH WORKSHOP ON FLAVOR SYMMETRIES AND CONSEQUENCES IN ACCELERATORS AND COSMOLOGY · 上海和合肥 📍
报告: **Constraining secret neutrino interactions with big bang nucleosynthesis**
- 2019 INVISIBLES 19 SCHOOL AND WORKSHOP ON NEUTRINOS, DARK MATTER AND DARK ENERGY · 坎弗兰克和瓦伦西亚 📍
海报: **Probing cosmic axions in the atomic system with superradiance**
- 2018 THE 10TH NATIONAL CONGRESS AND ACADEMIC ANNUAL MEETING OF THE HIGH ENERGY PHYSICS BRANCH OF CHINESE PHYSICAL SOCIETY · 上海 📍
报告: **Sterile neutrinos explaining the ANITA anomaly**
- 2016 THE INTERNATIONAL WORKSHOP ON NEXT GENERATION NUCLEON DECAY AND NEUTRINO DETECTORS · 北京 📍