

CURRICULUM VITAE

Hao-Jui Kuan

Personal information

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Professional experience

2025 - Research scholar at Illinois Center for Advanced Studies of the Universe & University of Illinois Urbana-Champaign, United States. *Mentor: Nicolas Yunes, Jacquelyn Noronha-Hostler.*
2023 - 2025 Postdoc in the Computational Relativistic Astrophysics division at the Max Planck Institute for Gravitational Physics (Albert Einstein Institute), Germany. *Mentor: Masaru Shibata.*

Education

2019 - 2022 University of Tübingen, Tübingen, Germany. *Advisor: Kostas D. Kokkotas*
Ph.D. in Theoretical Astrophysics. Summa Cum Laude (excellent; $\lesssim 1$ in 50 graduates).
2017 - 2022 National Tsing Hua University, Taiwan. *Advisor: Chao-Qiang Geng*
PhD in Physics (joint degree).
2013 - 2017 National Tsing Hua University, Taiwan.
B.Sc Double major in Physics and Mathematics.

Honors and Awards

2023 Honorable Mention in the GWIC- [Braccini Thesis Prize](#)
2023 Dr. Friedrich Förster Prize, one awardee in Faculty of Science in University of Tübingen, €1,000.
2023 Student Outstanding Paper Award from NCTS (Taiwan), converted as ~ 620 USD.

Funded Grant Activity

2020 - 2021 “Neutron stars as gravitational wave sources”, Sandwich-Scholarship Programme, DAAD and MOST (Taiwan), €13,500.
2017 - 2020 Presidential Scholarship of National Tsing Hua University (Taiwan), converted as $\sim 18,700$ USD.

Reviewing Activities

Journals Physical Review Letter, Physical Review D, International Journal of Modern Physics D, European Physical Journal C, Monthly Notices of the Royal Astronomical Society

List of Presentations

Plenary Talks and Colloquia

2025
Feb 11 “Uncovering Extreme Matter and Gravity through Gravitational Waves from Neutron Star Mergers”, Academia Sinica, Taipei, Taiwan.
2022
Sep 10 “Premerger Neutron Star Physics”, Eleventh Aegean summer school, Syros, Greece.

Invited Seminars/Conference Talks

2025
June 17 “Tidal Resonance in Binary Neutron Star Mergers – Numerical Relativity Insights”, [Conference website](#), Varna, Bulgaria.
Feb 27 “Numerical Relativity Insights into Tidal Resonance Phenomena”, University of Tübingen, Germany.
2024
Nov 25 “Probing Subatomic Physics and Gravity through Gravitational Waves from Neutron Star Mergers”, Academia Sinica, Taipei, Taiwan.
Aug 1 “On the finite-size imprints on waveforms of binary neutron star mergers”, UIUC.
July 11 “Imprints of matter and scalar effects on waveforms from binary neutron star mergers”, online-seminar-in-mathematical-numerical-relativity ([website](#)).
April 24 “Imprints of matter and scalar effects on waveforms from binary neutron star mergers”,

- April 8 Institute for Gravitational and Subatomic Physics (GRASP), Utrecht University.
“(Dynamical) Tidal Effects in the Binary Neutron Star mergers”,
 AstroParticle and Cosmology laboratory (APC), Paris, France.
- 2023**
- March 16 **“Dynamical Scalarization during Neutron Star Mergers in scalar-Gauss-Bonnet Theory”**,
 University of Tübingen, Germany.
- February 3 **“Developing waveform involving dynamical tides”**,
 Academia Sinica, Taipei, Taiwan.
- February 2 **“Gravitational Phase Transition in Massive Scalar-tensor Theory”**,
 National Center for Theoretical Sciences, Hsinchu, Taiwan.
- 2021**
- July 27 **“ g -mode resonances as triggers for precursors of SGRBs”**,
 Grav@zon group, Federal University of Pará, Pará, Brazil.
- Jun 22 **“Dynamical formation of scalarized black holes and neutron stars through stellar core collapse”**,
 cosmo/GW journal club, Johns Hopkins University, Maryland, USA.

Contributed Talks

- 2025**
- July 24 **“Tidal Resonance in Binary Neutron Star Mergers”**,
 New Frontiers 2025 in Numerical Relativity, Mallorca, Spain.
- 2024**
- Oct 9 **“On the finite-size imprints on waveforms of binary neutron star mergers”**,
 Observatoire de Paris - site de Meudon, France.
- Feb 28 **“Binary neutron star mergers in massive scalar-tensor theory”**,
 Gravity and Cosmology 2024, Yukawa Institute for Theoretical Physics, Kyoto, Japan.
- 2023**
- Oct 26 **“Binary neutron star mergers in massive scalar-tensor theory: an adiabatic look”**,
 poster, GravityShapePisa 2023, Pisa, Italy.
- April 5 **“Dynamical Scalarization during BNS mergers in scalar-Gauss-Bonnet”**,
 CoCoNut meeting, Potsdam, Germany.
- March 22 **“Packed Message delivered by Tides in Binary Neutron Star Mergers”**,
 SMuK2023, Technical University Dresden, Germany.
- 2022**
- Sep 08 **“Gravitaional Phase Transition”**, Eleventh Aegean summer school, Syros, Greece.
- May 16-19 **“Tidal effects in the pre-merger stage of coalescing binary neutron stars”**, e-poster,
 PHAROS: The multi-messenger physics and astrophysics of neutron stars, Roma, Italy.
- Mar 3 **“Resonance shattering as triggers for precursors of SGRBs”**,
 DPG Meeting of the Matter and Cosmos section (SMuK), Heidelberg, Germany.
- 2021**
- Aug30 - Sep3 **“Tidal g -mode resonances in coalescing binaries of neutron stars as triggers for precursor flares of short gamma-ray bursts”**,
 DPG Meeting of the Matter and Cosmos section (SMuK), Bad Honnef, Germany.
- Feb 24-28 **“Inverse-Chirp Imprint of GW in Scalar Tensor Theory”**,
 56th Karpacz Winter School in Theoretical Physics, Karpacz, Poland.

Teaching Activities

Teaching assistant

- At Tsing Hua** General Relativity (2016 Fall, 2018 Fall)
 Mathematical Physics (2017-2018)
 Thermal Physics (2016-2017)
 Calculus (2018-2019)
- At Tübingen** Physical Practical (2021 Summer & Winter)
 Grundkurs Elektromagnetismus (2022 Summer)

Outreach lecturing

- Black hole lectures at **Jürgen Ehlers Spring School**, Potsdam, March 3–14, 2025.