

# CURRICULUM VITAE

Hao-Jui Kuan

## Personal information

Date of birth : 13 July 1995  
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## Professional experience

2025 - Research scholar at Illinois Center for Advanced Studies of the Universe and University of Illinois Urbana-Champaign, United States. *Mentor: Nicolas Yunes.*  
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  $\sim 620$  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 Electromagnetism (2022 Summer)

### Outreach lecturing

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