

# CURRICULUM VITAE

Hao-Jui Kuan

## Personal information

Date of birth : 13 July 1995  
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## Professional experience

2023 - Postdoc in the Computational Relativistic Astrophysics division at the Max Planck Institute for Gravitational Physics (Albert Einstein Institute)

## Education

2019 - 2022 University of Tübingen, Tübingen, Germany. *Advisor: Kostas D. Kokkotas*  
Ph.D. in Theoretical Astrophysics. Summa Cum Laude (excellent; about 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 Gravitational Wave International Committee (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 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

#### 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**”, Institute for Gravitational and Subatomic Physics (GRASP), Utrecht University.

April 8 “**(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**”,

- February 2 Academia Sinica, Taipei, Taiwan.  
**“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

- 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)