

Lin Yen-Hsing

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Personal Website (more detailed information!)



EDUCATION

Undergraduate: National Tsing Hua University

Interdisciplinary Program of Science (IPS) double program in Physics and Astronomy

Hsinchu, Taiwan

2017 – 2021

Master's: National Tsing Hua University

Institute of Astronomy (IoA)

Hsinchu, Taiwan

2021 – 2023

ACADEMIC EXPERIENCE

Institute of Astronomy and Astrophysics, Academia Sinica

Undergraduate Student, PI: Dr. Hiroyuki Hirashita

Taipei, Taiwan

2019 – 2021

- Investigating the effect of geometry and dust grain size distribution on the SED of high redshift galaxies using radiation transfer code SKIRT.

Institute of Astronomy, NTHU

Undergraduate / Master Student, PI: Prof. Hsiang-Yi Karen Yang

Hsinchu, Taiwan

2020 – 2023

- Investigating cosmic ray dominated AGN jet mode feedback with 3D CRMHD simulations using FLASH, with focus on cosmic ray composition and odd radio circles (ORCs).

SCIENTIFIC PUBLICATIONS

1. **Yen-Hsing Lin**, Hiroyuki Hirashita, Peter Camps, Maarten Baes, "Geometry effects on dust attenuation curves with different grain sources at high redshift", Monthly Notices of the Royal Astronomical Society, Volume 507, Issue 2, October 2021, Pages 2755-2765
2. Yuan-Ming Hsu, Hiroyuki Hirashita, **Yen-Hsing Lin**, Peter Camps, Maarten Baes, "Effects of dust sources on dust attenuation properties in IllustrisTNG galaxies at $z \sim 7$ ", Monthly Notices of the Royal Astronomical Society, Volume 519, Issue 2, February 2023, Pages 2475-2485.
3. **Yen-Hsing Lin**, H.-Y. Karen Yang, Ellis R. Owen, "Evolution and feedback of AGN Jets of different Cosmic-ray Composition", Monthly Notices of the Royal Astronomical Society, Volume 520, Issue 1, March 2023, Pages 963-975.
4. **Yen-Hsing Lin**, H.-Y. Karen Yang, "Odd radio circles as cosmic ray dominated end-on AGN jet inflated bubbles", ApJ in prep.

AWARDS AND SCHOLARSHIPS

NSTC: National Science and Technology Council; **NCTS**: National Center for Theoretical Sciences

TPS: Physical Society in Taiwan; **ASROC**: The Astronomical Society of the Republic of China (Taiwan)

- **2023 (NSTC) Graduate Research Fellowship**

- 2023.10.19. 4 years. 40000 NTD (~ 1300 USD) per month.

- **2023 ASROC oral competition: Merit award**

- Title: Could odd radio circles be end-on AGN jet inflated bubbles?, 2023.05.21
- **2023 NTHU College of Science Elite Student Award**
- **2023 TPS annual meeting poster competition: Merit award**
- Title: Simulating the effects of cosmic-ray dominated jets in cool-core clusters, 2023.01.18
- **2022 TPS Undergraduates Student Thesis Award**
- Paper: “Geometry effects on dust attenuation curves with different grain sources at high redshift”, 2022.12.12.
- **2022 NCTS Student Outstanding Paper Award**
- Paper: “Geometry effects on dust attenuation curves with different grain sources at high redshift”, 2022 Summer.
- **2022 TPS Annual Meeting Poster Competition: Honorable Mention**
- Annual Meeting of the Physical Society of Taiwan, 2022.01.25.
- **2021 NTHU Physics Poster Competition: 1st place**
- NTHU Physics Department. 2021.12.29.

INVITED TALKS

1. **NCTS annual theory meeting**
 - Simulating the effects of cosmic-ray dominated jets in galaxy clusters. 2022.12.14
2. **NCTS outstanding student paper award ceremony**
 - Geometry effect on dust attenuation curves of different grain sources in high redshift, 2022.09.23
3. **NCTS astrophysics seminar**
 - Evolution of AGN Jets of different cosmic-ray composition, 2022.08.26.
4. **NTU physics department student seminar**
 - Geometry effect on dust attenuation in high redshift / Evolution of AGN jets of different cosmic-ray composition, 2021.05.13

ASTRONOMY COURSES

- **Undergraduate:** 29 credits in total, GPA: 4.15/4.3.
- **Master’s:** 28 credits in total, GPA: 4.3/4.3.

PROGRAMMING SKILLS

- **Languages:** Python, Fortran 90 (FLASH), LaTeX, Bash script, HTML/CSS, Matlab.
- **Python packages:**
 - General: numpy, matplotlib, pandas, scipy
 - Astropy: cosmology/photometry
 - pyXSIM/SOXS: X-ray mock observation
 - Astrometry: Plate solving
 - FSPS: Stellar population synthesis
- **Standalone tools/software:**
 - Git/Github: Version control and collaboration
 - Slurm: Resources management on high performance computing facility
 - SKIRT9: 3D radiative transfer
 - DS9/AstroImageJ/Siril/SExtractor: Image inspection and photometry

- HOPS: Exoplanet transit analysis
- Gadget4: Cosmological simulations

TEACHING

- **Advisor of astronomy club** 2019 – 2022
National Hsinchu Girl's Senior High School, Taiwan
Teaching high school students about astronomy knowledge, telescope operation and club management.
- **Teaching assistant: NTHU Physics Department** 2021–Current
General Physics B (2021), Introduction to Black Hole Astrophysics (2022, 2023), Fundamental Observational Astronomy (2022), Taiwan astronomy observation network observer training camp (2022)
- **Teaching assistant: NTHU Institute of Astronomy** 2022–Current
Computational Astrophysics (2022), High Energy Astrophysics (2023)
- **Teaching assistant: NTHU The center of teaching and learning development** 2022–Current
Supermassive black holes and active galaxies (MOOCs course, 2022)
- **Teaching assistant: HCHS Earth Science Competition Team** 2017–Current
*I've been training talented students in my high school for the International Earth Science Olympiad (IESO).
Two of my students recently won silver medal in IESO 2022.*

CONTRIBUTED TALKS

1. **2023 ASROC annual meeting (Oral)**
– Could Odd Radio Circles be end-on AGN jet inflated bubbles?, 2023.05.21
2. **2023 TPS annual meeting (Poster)**
– Simulating the effects of cosmic-ray dominated jets in cool-core clusters, 2023.01.18
3. **2022 TPS annual meeting (Poster)**
– Evolution of AGN Jets of different Cosmic-ray Composition, 2022.01.25
4. **NTHU Physics department poster competition (Poster)**
– Evolution of AGN Jets of different Cosmic-ray Composition, 2021.12.28
5. **2020 ASROC annual meeting (Poster)**
– Geometry effects on dust attenuation curves with different grain sources at high redshift, 2020.09.03
6. **Galaxy Workshop 2020 (Poster)**
– Geometry effects on dust attenuation curves with different grain sources at high redshift, 2021.02.05

I also present in NTHU IoA journal club roughly twice per month.

EXTRACURRICULAR ACTIVITIES

- **EASY Astronomy and Earth Science promotion team** 2017 – Current
Vice Coordinator and Chief Editor for FB, IG, Blogger and Patreon.
*We have roughly 10000 followers on Facebook, 2000 on Instagram,
and long-term collaborations with Science Monthly, Pansci, and Scientific American Taiwan Edition.*
- **Astronomy Club of University Union in Taiwan (ACUUT)** 2019 – Current
Supervisor (2021 – 2023)
Science Communication Working Group: Chief editor (2021 – Current)
Camp of Leadership: Coordinator (2021), Staff (2022)
Workshop Coordinator: Space Technologies (2022), Astrophotography (2022)

- NTHU Astronomy Club 2017 – Current
Education officer (2018 – 2019) / Vice director (2019 – 2020)
Founder and host of [Astrophysics Study Group](#) (2018 – 2020)
- NTHU Observatory 2018 – Current
Minor contribution with no official position (2018 – 2023)
Observation operator (2023 – Current)
- The Exoclock Project 2023 – Current
Exoplanet ephemerides monitoring through amateur observatories around the world.
I'm a contributing observer, with 25 exoplanet transit observations published so far.

SELECTED POPULAR SCIENCE / EDUCATIONAL PUBLICATIONS

The complete list of ~ 40 publications can be found on [my website](#). Articles on *Science Monthly* are reviewed by anonymous, professor-level reviewers, while articles on *Pansci* are reviewed by their editors.

1. **Lin Yen-Hsing**, Wen-Hsin Chen, “[The History of the Troubled Jovian Moon Exploration.](#)”, Scientific American Taiwan Edition, August 2023
2. **Lin Yen-Hsing**, “[The science behind JWST’s first images](#)”, Pansci, July 2022.
3. **Lin Yen-Hsing**, “[Fermi Bubbles: The ultra hot remanent of SMBH jets](#)”, Pansci, April 2022.
4. **Lin Yen-Hsing**, “[Creating an universe in lab: Cosmological Simulations](#)”, Science Monthly, May 2021

SELECTED PUBLIC TALKS

I have given more than 50 talks with a broad topic (astrophysics, science communication, astronomy community, and so on) and audience (from elementary school to graduated astrophysics students) since 2019.

1. **The Kaleidoscope of Satellite Orbits**
– 2021.03.09, Nanshan High School. (Junior high school students)
2. **Physical principles in observational astronomy**
– 2022.07.10, Malaysia Olympiad on Astronomy and Astrophysics (MOAA) guest lecture. (Talented high school students)
3. **Scientific Presentation: Oral, Poster and Pop-Science**
– 2023.02.12, NTHU Astronomy Club Astrophysics study group seminar. (Undergraduate students)
4. **A new force in Taiwan’s astronomy community:
Astronomy Club Union of Universities of Taiwan (ACUUT)**
– 2021.11.27, NTHU Astronomy Club 50th anniversary. (General public)

This CV is created by modifying Doruk Çetin’s Simple-CV template.
Last update on December 4, 2023.