

I-DA CHIANG

E-mail: idchiang@asiaa.sinica.edu.tw | LinkedIn: [idchiang](#)

RESEARCH INTERESTS

Dust Life Cycle & Interstellar Medium

I am interested in the evolution of dust in the interstellar medium. One of my project is measuring the spatially resolved dust-to-metals ratio in the nearby galaxies, and interpreting the results with dust chemical evolution models, simulations and auxiliary data.

HI 21 cm Line & Radio Astronomy

The distribution of neutral gas is a key element in dust-to-metals ratio studies. The HI 21 cm line traces neutral hydrogen atoms in the ISM. I reduced new HI 21cm line data of ~ 30 galaxies observed by VLA with CASA. These new data allows us to construct a new dust-to-metals ratio survey in the nearby galaxies.

EXPERIENCE

Institute of Astronomy and Astrophysics, Academia Sinica
Postdoc Fellow

Sep. 2021 - Current

University of California San Diego
Graduate Research Assistant

Sep. 2014 - Jun. 2021

- Built a python-based toolkit for dust SED fitting and multi-wavelength data analysis.
- Analyzed the dust-to-gas and dust-to-metal ratios in the spiral galaxy M101.
- Analyzed the dust-to-metal ratio and CO-to-H₂ conversion factor in detail in ~ 50 nearby galaxies.
- Examined the empirical radiation distribution law and the turbulent power spectrum in the local group galaxies with the dust SED fitting tools.
- Reduced HI 21cm line data of ~ 30 galaxies observed by VLA with the Common Astronomy Software Applications package (CASA).

University of California San Diego
Teaching Assistant (TA) and Lab TA Coordinator

Sep. 2014 - Jun. 2016

- Familiarized new teaching assistants with lab setups and teaching skills.
- Led discussion sessions, which helped ~ 40 students each week.
- Led introductory level physics lab, with 24 students per session.
- Improved course materials from feedback from teaching assistants and students.

National Taiwan University
Graduate Research Assistant

Sep. 2012 - Jun. 2014

- Improved the photo-degradation reactor for wastewater treatment with plasmonic nano-particles.
- Built the protocol for maintaining/using the sputter machine and clean room.

Taiwan (R.O.C.) Armed Forces
Second Lieutenant (Company second-in-command)

Aug. 2011 - Jul. 2012

EDUCATION

University of California San Diego

Sep. 2014 - Jun. 2021

Ph.D. (Physics and Astronomy)

Thesis: “Observations of Spatially Resolved Dust Evolution in Nearby Galaxies”

Adviser: Prof. Karin M. Sandstrom

National Taiwan University

Aug. 2012 - Jul. 2014

M.S. (Physics)

Thesis: “Plasmonic Enhanced Optical Disk Reactor for Wastewater Treatment”

Adviser: Prof. Din Ping Tsai

National Taiwan University

Sep. 2007 - Jun. 2011

B.S. (Physics)

REFEREED PUBLICATIONS AS FIRST OR SECOND AUTHOR

4) **I-D. Chiang**, K.M. Sandstrom, J. Chastenet, E. Koch, K. Kreckel, A.K. Leroy, A. Schrubba, D. Utomo, T. Williams, “Resolving the Dust-to-Metals Ratio and CO-to-H₂ Conversion Factor in the Nearby Universe”, 2021, ApJ, 907, 29.

3) E.W. Koch, **I-D. Chiang**, D. Utomo, J. Chastenet, A.K. Leroy, E.W. Rosolowsky, K.M. Sandstrom, “Spatial power spectra of dust across the Local Group: No constraint on disc scale height”, 2020, MNRAS, 492, 2663.

2) D. Utomo, **I-D. Chiang**, A.K. Leroy, K.M. Sandstrom, J. Chastenet, “The Resolved Distributions of Dust Mass and Temperature in Local Group Galaxies”, 2019, ApJ, 874, 141.

1) **I-D. Chiang**, K.M. Sandstrom, J. Chastenet, L.C. Johnson, A.K. Leroy, D. Utomo, “The Spatially Resolved Dust-to-metals Ratio in M101”, 2018, ApJ, 865, 117.

A full publication list at ADS Public Library is available [here](#).

RESEARCH PRESENTATIONS

Contributed talk, “Dust, gas and metals: Resolving the Dust Life Cycle in the Nearby Universe”, The AAS 235th Meeting, Honolulu, USA *2020*

Special seminar, “Dust-to-Metals Relation in Nearby Galaxies”, ASIAA, Taipei, Taiwan *2019*

Poster, ASROC2019, Taichung, Taiwan *2019*

Contributed talk, “The Variation of the Dust-to-Metals Ratio in Resolved Nearby Galaxies”, Dusting the Universe, Tucson, USA *2019*

Lunch talk, University of California, San Diego, USA *2019*

Tea time talk, University of California, San Diego, USA *2018*

Poster, CPHDUST, Copenhagen, Denmark *2018*

Poster, ASROC2018, Kinmen, Taiwan *2018*

Lunch talk, University of California, San Diego, USA *2018*

TEACHING EXPERIENCE

Lab TA Coordinator, PHYS 1-ABC Lab – University of California, San Diego *2015 - 2016*

Teaching Assistant, PHYS 1-A Lab – University of California, San Diego *2014 - 2015*

OUTREACH EXPERIENCE

Python workshop for physics undergrads – presenter	<i>2019</i>
STEM in Your Backyard: City Heights – presenter	<i>2018</i>
Tech Trek: University of California, San Diego – presenter	<i>2017</i>
Physics GRE bootcamp at UCSD – teaching assistant	<i>2016</i>

AWARDS

Dean's Award, College of Science, National Taiwan University	<i>2014</i>
Dean's Award, College of Science, National Taiwan University	<i>2011</i>
Presidential Award, National Taiwan University	<i>2011</i>