Xueqing Chen

xuechen@student.ethz.ch | Paul-Feyerabend-Hof 5a, 8049 Zurich, Switzerland
+41 767278937 | Chinese | 23.11.1997 | linkedin.com/in/xueqingchen/

EDUCATION

ETH Zurich, *MSc in Physics* 09.2019 – present | Zurich, Switzerland
Relevant courses: Astrophysics, Extrasolar Planets, General Relativity, Quantum Field Theory

Chinese University of Hong Kong, Shenzhen, 09.2015 – 06.2019 | Shenzhen, China
BSc in New Energy Science and Engineering
Honours, First Class (GPA 3.76/4)

RESEARCH EXPERIENCE

Master Thesis, 03.2021 – 12.2021 | Zurich, Switzerland
Computational Astrophysics Group, ETH Zürich
Project in Observability of forming planets with near future telescopes (Supervision: Judit Szulágyi)
- Computed intensity images and SEDs from hydrodynamic simulations of planet forming disks using RADMC-3D radiative transfer code
- Developed pipelines for simulating JWST NIRCam, NIRISS & MIRI and ELT MICADO & METIS images with telescope simulator softwares and performed photometric analysis on the results
- Assisted in developing a python pipeline for hydrodynamic simulation output data conversion

Semester Project, 09.2020 – 12.2020 | Zurich, Switzerland
Exoplanet and Habitability Group, ETH Zürich
Project in Earth as an Exoplanet - Clouds and their Influence on Earth's Thermal Emission (Supervision: Sascha Quanz, Jean-Nöel Mettler)
- Analyzed cloud and thermal radiance data over 18 years from MODIS instrument onboard the NASA Aqua satellite to investigate the effect of cloud height and optical thickness on Earth's thermal radiance spectrum for 4 different planet surface types

Research Assistant, 06.2017 – 12.2018 | Shenzhen, China
Nano Opto-Electronics Laboratory, CUHK(SZ)
Project in GaAsBi Quantum Well Laser
- Performed finite-domain time-difference (FDTD) simulation of laser disks with Lumerical FDTD to investigate the effect of tunable disk radius on the lasing spectra and electromagnetic field profiles of quantum well micro-disk lasers, and compared results with sample testing data

Project in Anti-reflective Selective Solar Absorbers
- Conducted optical simulation of absorption and reflection profile on different absorbing materials and structures using FDTD method
- Investigated fabrication methods of nano-micro surface structure on solar absorbers and assisted in sample chips preparation in the lab

TEACHING EXPERIENCE

Teaching Assistant, 01.2017 – 12.2017 | Shenzhen, China
School of Science and Engineering, CUHK(SZ)
PHY1002, Physics Laboratory
- Assisted weekly physics lab sessions of around 50 students to provide guidance with experiment methods, data analysis and report writing

CSC1002, Computational Laboratory
- Led python programming tutorial sessions of around 20 students and prepared teaching materials
- supervised an image classification project using introductory machine learning model

PUBLICATIONS

Observability of Forming Planets and their Circumplanetary Disks IV. – with JWST & ELT.
X. Chen & J. Szulágyi (submitted to MNRAS)
https://arxiv.org/abs/2112.12821

Continuous wave operation of GaAsBi microdisk lasers at room temperature with large wavelengths ranging from 1.27 to 1.41 μm.
X. Liu, L. Wang, X. Fang, T. Zhou, G. Xiang, B. Xiang, **X. Chen**, S. K. Hark, et al. *Photonics Research*, Vol.7, Issue 5, pp.508-512. (2019)

THESES AND REPORTS

Observability of forming planets with near future telescopes, Master's Thesis presented to ETH Zürich. (2021)

Earth as an Exoplanet: Clouds and their Influence on Earth's Thermal Emission, Semester project report presented to ETH Zürich. (2021)

Detecting atmospheric O2 in Proxima b with high resolution spectroscopy, Mock research proposal written for the course Extrasolar Planet at ETH Zürich. (2020)

AWARDS

Undergraduate Research Award, *CUHK(SZ)* 07.2018
RMB 1,000 per month for 3 months to encourage undergraduate research work

Academic Performance Scholarship - Class A, 10.2017
CUHK(SZ)
RMB 80,000 per year for one year awarded to recognize excellent academic achievement

Dean's List Award, *CUHK(SZ)* 10.2016
Awarded for outstanding academic performance in 4 consecutive years (2016 / 17 / 18 / 19).

SKILLS

Programming
Python (data analysis, data pipelines, image processing, visualization),
Matlab (FEM simulation, optimization),
Bash, Latex, Git, Linux, C++

Astronomical codes & softwares
Astropy, RADMC-3D (radiative transfer), JWST pipeline (data reduction), JWST APT (observation planning), MIRISim, Mirage, SimCADO, SimMETIS (instrument simulation)

LANGUAGES

English (C1, IELTS 7.5) | **Chinese** (Native) | **German** (A1)