Kwok Sun Tang

Curriculum Vitae

Education

2014–2016 **Master of Philosophy (MPhil) in Physics**, *The Chinese University of Hong Kong*.

2013–2014 **Master of Science (MSc) in Physics**, *The Chinese University of Hong Kong*.

2010–2013 **Bachelor of Science (BSc) in Physics**, *The Chinese University of Hong Kong*.

Research Experience

2017–Now , *Thesis Supervisor: Prof. Matthew Turk*, UIUC, US.

- **Study the formation of first stars with supercomputers**

2014–2016 **MPhil**, *Thesis Supervisor: Prof. Hua-Bai Li*, CUHK, Hong Kong.

- **Study how neutral flows decouples from magnetized turbulence during star formation.**
  - This project is essential to understand how cores/proto-stellar discs can be formed.
  - Observation proposal submitted as the PI to *ASTE* for this project was granted 38 hours of observation time.
  - Preliminary analyses demonstrate a direct correlation of linewidth difference between ions and neutrals with B-field strength.

2013–2014 **MSc**, *Project Supervisor: Prof. Hua-Bai Li*, CUHK, Hong Kong.

- **Study the depolarization of thermal dust emission towards star-forming cores**
  - We discover that this phenomenon can be explained with the increasing dispersion of B-field direction in the dense filaments from simulation data (Ostriker et al. 2001) without involving the popular theory: The decrease in alignment efficiency of dust grains in high density regions. The result is featured in one of the Chapters *"The link between Magnetic fields and Cloud/Star Formation"* in the Protostars & Planets VI series.
  - With polarization data archives from JCMT and CARMA, we find evidence that support our analyses from simulation data cubes. We are now preparing a manuscript on "Understanding Polarization Hole" and will soon submit it to *ApJL*

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Summer 2013 **Summer Student Program**,
Project Supervisor: Dr. Hyosun Kim, Prof. Ronald Taam, Prof. Mark Morris, ASIAA, Taipei.

- **Study the spiral pattern observed around AGB stars**
  - Simulate the spiral patterns driven by a binary where one of them is undergoing mass ejection phase (Code by Dr. Morris)
  - Tabulate a catalogue of objects showing these spiral patterns

2012-2013 **Final Year Project**, *Project Supervisor: Dr. Lap-Ming Lin*, CUHK, Hong Kong.

- **Study the equilibrium configuration of neutron stars**
  - With a given equation of state, we tried to derive equilibrium configurations of neutrons stars with different rotational speed with virial Theorem.
  - We also tested it stability in a hydrodynamic code written by Dr. Shing-Chi Leung

Contributed Talk & Attended Conference

10 Aug 2015 **Observing magnetic fields in molecular clouds**,
Subaru Seminar, Subaru Hilo Base, Hilo, Hawaii.

3-14 Aug 2015 **Understanding Polarization Hole**,
XXIX IAU General Assembly, Poster Presentation,
Hawaii Convention Center, Honolulu, Hawaii.

29 Jun - 1 Jul 2015 **Understanding Polarization Hole**,
NAOJ Star formation workshop, Contributed Talk,
NAOJ Mitaka Campus, Tokyo, Japan.

Public Outreach Experience

2013-2014 **Research Assitant**, *CUHK Physics Outreach Team (CUPOT)*, Hong Kong.

- Help our undergraduates to develop their presentation skills and team-working skills through promoting popular science to the general public
- Prepare interactive science workshops for high school students

Summer 2012 **Summer Internship**, *The Hong Kong Space Museum*, Hong Kong.

- Assit curators to promote astronomy and space science to general public
- Prepare a section for the regular Newsletter by space museum

2011-2012 **Committe Member**, *CUHK Astronomy Club*, Hong Kong.

- Promote Astronomy to club members
- orgranize camps for high school students

Computer skills

Basic Fortran, Linux, Latex

Competent python, IDL, Miriad, OpenOffice, Microsoft Windows

Languages

Cantonese **Mothertongue**

Mandarin **Mothertongue**

English **Intermediate** *Conversationally fluent*