Kuan-Wei **Huang**

Cosmology · Physics

Dept. of Physics, 5000 Forbes Avenue, Pittsburgh, PA 15213, USA

+1 412-268-3101 | ✉ kuanweih@andrew.cmu.edu | 🏠 kuanweih.github.io | kuanweih

Education

Carnegie Mellon University	*Pittsburgh, USA*
Ph.D. in Physics	*Aug. 2016 - PRESENT*

- Advisor: Prof. Tiziana Di Matteo

National Taiwan University	*Taipei, Taiwan*
M.S. in Physics	*Sept. 2014 - Jul. 2016*

- Thesis: Numerically solving the Schrödinger equation in hydrodynamic form
- Advisor: Prof. Tzihong Chiueh

National Taiwan University	*Taipei, Taiwan*
B.S. in Physics	*Sept. 2009 - Jun. 2013*

Research Experience

The McWilliams Center for Cosmology	*Pittsburgh, U.S.A*
PhD student. Advisor: Prof. Tiziana Di Matteo	*Aug. 2016 - Present*

- **Project: Test the influence of different supermassive black hole seeding masses in simulation (in progress)**
- Ran simulations using MP-Gadget (a N-body+hydro solver) to test different seeding masses
- **Project: BlueTides simulation: establishing black hole-galaxy relations at high-redshift [2]**
- Studied the scaling relations between mass of supermassive black hole and galaxy properties in BlueTides simulation

Dept. of Physics, National Taiwan University	*Taipei, Taiwan*
MS student. Advisor: Prof. Tzihong Chiueh	*Jul. 2012 - Jun. 2013*

- **Thesis: Numerically solving Schrödinger equation in hydrodynamic form in expanding universe**
- Numerically solved the flux-conservative initial value problems of quantum wave dark matter (ψDM)
- **Project: Contrasting galaxy formation from ψDM with ΛCDM, using Planck and Hubble data [1]**
- Studied the power spectrum, transfer function, halo mass function, and luminosity function of ψDM and CDM

Dept. of Physics, National Taiwan University	*Taipei, Taiwan*
Undergraduate Researcher. Advisor: Prof. Jiun-Huei Proty Wu	*Sept. 2011 - Aug. 2013*

- Numerically tested the evolution of gravitational waves with different initial conditions in loop quantum cosmology

Dept. of Physics, National Taiwan University	*Taipei, Taiwan*
Undergraduate Researcher. Advisor: Prof. Yih-Yuh Chen	*Sept. 2012 - Feb. 2013*

- Researched Percell's three-link swimmer and self-propelled micro-swimmers at low Reynolds number

Skills

Programming	Python, C/C++, Matlab, Mathematica, LaTeX, IDL
Languages	Taiwanese (native), Mandarin (bilingual), English

Publications

[2] **K.-W. Huang**, T. Di Matteo, A. K. Bhowmick, Y. Feng, and C.-P. Ma. BlueTides simulation: establishing black hole-galaxy relations at high-redshift. ArXiv e-prints, January 2018.

[1] H.-Y. Schive, T. Chiueh, T. Broadhurst, and **K.-W. Huang**. Contrasting Galaxy Formation from Quantum Wave Dark Matter, ψDM, with ΛCDM, using Planck and Hubble Data. ApJ, 818:89, February 2016.