Pi Square

Personal Information

Birth Date:	Feb 18, 1992	Phone:	86 15201523301
Addr:	ZJ#14, Tsinghua University	Email:	hpp1681@gmail.com

Education

2010.9-2014.7	Department of Engineering Physics, Tsinghua University， Bachelor Majored in Physics. Received the **first-class scholarship** for outstanding academics at Tsinghua University
2014.9-Now	Tsinghua University Institute of Advanced Studies, Ph.D. Majoring in applied mathematics

Project and research

2019.1-2019.09	Revealing unknown dynamics through machine learning • Extracting the patterns from the complex data is a critical problem in many areas. We replace the network in the machine learning by differential equations with multiple coefficients and optimize the parameters using machine learning methods, in preparation.	THU
2017.3-2019.3	Linear and nonlinear electromagnetic waves in modulated honeycomb media • Dynamics of nonlinear waves near the Dirac point in a two-dimensional honeycomb structure. Numerical simulations of the original equations and derived envelope equation agree perfectly. Received by Studies in Applied Mathematics. See https://arxiv.org/abs/1909.04933 for preprint.	THU
2018.1-2018.10	Topologically Protected Edge Mode Simulation • Dynamic Analysis and Calculation of Topologically Protected Edge States in Two-Dimensional Honeycomb Structure, in preparation.	THU
2017.6-2017.9	Visiting Scholar: Evolution of Nonlinear Wave Equations with TB model • Numerical calculation of nonlinear waves in a honeycomb structure. • Analyze data structures, design numerical formats, calculate solutions for partial differential equations, and use Matlab and Python code for thousands of lines.	CU Boulder
2017.6-2018.10	Application of Machine Learning in the Determination of Flow Stability • Through the method of machine learning, the phase transition point in the physical process is identified. For example, the Kelvin–Helmholtz instability can occur when there is velocity shear in a single continuous fluid, or where there is a velocity difference across the interface.	THU
2014.3-2014.6	Numerical Simulation of Porous Media Combustion • Learning Linux and the open source fluid numerical calculation software OpenFoam. • Make numerical simulation on the combustion of porous media, and won **the excellent graduation thesis of Tsinghua University**.	THU

BASIC SKILLS

English:	CET/6 Literature reading and writing, free communication with native English speakers.
computer :	Proficiency in **Python**, Matlab and etc, familiar with **Pytorch**. Familiar with **Linux**, skilled use of Vim, personal website `http://www.cam1681.com` on Github
mathematics :	Good at **theory of machine learning**, and numerical methods for matrix calculation and PDEs. Good at modeling, analysis and numerical calculation of partial differential equations.