Jiasheng He

Curriculum Vitæ   25 October 2020

📞 (614) 736-2836   ✉ he.1326@osu.edu
🗺 484 Stinchcomb Drive, Columbus, Ohio 43202, USA
🌐 https://hjs20092009.github.io
http://u.osu.edu/he1326hseportfolio/

EDUCATION

The Ohio State University   Columbus, Ohio, USA   expected to graduate in May 2021

B.S. in Physics	4.000 out of 4.000 Physics GPA
B.S. in Mathematics	3.972 out of 4.000 Mathematics GPA
Arts and Sciences Honors Program	3.981 out of 4.000 Total GPA
Senior ΦΚΦ	

HONORS AND AWARDS

Merit Scholarship from Rickard Memorial Fund, The Ohio State University   Spring 2020
  Nominated by mathematics faculty and awarded to honors students with outstanding academic record

Smith Senior Award, The Ohio State University   April 2020
  Nominated by physics faculty and to the fourth-year students for high academic achievement

Merit Scholarship from Gordan Memorial Fund, The Ohio State University   Autumn 2019
  Nominated by mathematics faculty and awarded to honors students with outstanding academic record

Smith Junior Award, The Ohio State University   April 2019
  Nominated by physics faculty and awarded to the third-year students for high academic achievement

Smith Sophomore Award, The Ohio State University   April 2018
  Nominated by physics faculty and awarded to the second-year students for high academic achievement

Dean's List, The Ohio State University   Every Full-Time Semester
  Award to the students with a 3.5 or higher GPA and more than 12 graded credit hours in a semester

RESEARCH INTERESTS

Strongly-interacting many-body systems and their interaction with light and strong fields: superconductivity, quantum Hall effect, topological effects, and symmetry breaking in phase transition. The geometric and topological description of these systems. Imaging, nitrogen-vacancy center, and related topics in quantum optics.

RESEARCH EXPERIENCES

Wigner Crystal State in Twisted Bilayer Graphene   *Solid State Theory*
  Advised by Dr. Brian Skinner at The Ohio State University.
  Investigated the Wigner crystal state of electrons on twisted bilayer graphene; calculated the lowest energy per electron and found the melting point of the Wigner crystahl; the twisted bilayer graphene provides a different effective fine structure constant and formalism of potential

Becchi-Rouet-Stora-Tyutin (BRST) Theory in Density Functional   *Quantum Many-Body Theory, Quantum Gauge Theory*
  Advised by Prof. Richard Furnstahl at The Ohio State University.
  Carefully studied the constrained Hamiltonian system, ghost, and the algebra and geometry of BRST quantization; applied them in formulating the density functional of a Mexican hat toy model

Mass Density and Velocity Distribution of Dark Matter Haloes   *Computational Many-Body Astrophysics*
  2019 Summer Undergraduate Research Program at The Ohio State University with scholarship $3500, advised by Dr. Annika Peter.
  Ran cosmological simulation programs AREPO and GADGET-2 on supercomputer, analyzed the dark matter density and speed; the result was presented in a poster at the poster session of the program.

Check details and current results of my research at my website listed above.

SKILLS

Proficient   C   C++   Python   bash   LATEX 2$_\varepsilon$ GSL   gnuplot   h5py and HDF5   matplotlib   numpy   SciPy
    juypter notebook   Wolfram Mathematica   SciDAVis   ImageJ   Microsoft Word, Excel, PowerPoint
    seven-year-long using experience of RedHat / CentOS / fedora Linux operating system

Familiar   HTML   MATLAB   BSD operating system

EMPLOYMENT

The Ohio State University, Student Instructional Assistant   August 2018 – May 2019
  Tutored, graded homework, and proctored exams for intermediate mechanics course