YUANBING YANG

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EDUCATION BACKGROUND

Fudan University September 2020 - June 2024
Major: B.S. in Physics
Overall GPA: 3.62/4.0 (91/100, ranking top 15%)
Core Modual: Group Theory, Methods of Mathematical Physics, Fundamentals of Computational Physics, Solid State Physics, Particle Physics, Quantum Mechanics II, Quantum Field Theory, Gauge Theories, Advanced Electrodynamics, Physical Biology

RESEARCH EXPERIENCE

Modeling for GW Tests with Binary Black Holes (Bachelor Thesis) December 2023 - June 2024
Supervisor: Cosimo Bambi *Fudan University, Shanghai*

- Aimed to construct a more advanced model incorporating black hole spins for gravitational wave tests of the Kerr metric with binary black holes, using KRZ metric as the parameterized Kerr metric for test.
- Read papers on the post-Newtonian theory, the effective one-body (EOB) theory and the derivation of the effective spin in EOB formalism, figuring out how to conduct the computation.

X-Ray Spectra Analysis Using Two-Corona Models July 2022 - December 2023
Supervisor: Cosimo Bambi *Fudan University, Shanghai*

- Aimed to test whether two-corona models can fit better the X-ray spectral data of black holes with strange emissivity profiles.
- Fit spectra of GS1354-645 and EXO1846-031 using Nustar data with chosen combination of astrophysical models which contain two corona(eg. `relxill+relxill`, `relxill+cutoffpl`), including advanced models with many parameters: `relxill`, `relxilllp`, `relxillion_nk`(they are all relativistic reflection models)
- Compared the AICc of two-corona models with one-corona standard case and found that two corona models can fit better the X-ray spectral data of GS1354-645 but cannot fit better for EXO1846-031.

Monte Carlo Simulation: Calculating Crystal Curie Temperature December 2022 - January 2023
Supervisor: Hongjun Xiang *Fudan University, Shanghai*

- Aimed to calculate the Curie temperature of the three-demensional face-centered cubic lattice using the Heisenberg spin model.
- Pick a temperature range, employ the Metropolis Algorithm to produce the Markov Chain of the lattice's spin structure under each specific temperature and obtain the average spin after equilibrium.
- Adjust parameters, plot the picture of average spin - temperature and get the simulated Curie temperature, which is approximately 4K.

HONORS & AWARDS

National First Prize in the 14th Chinese Mathematics Competitions December 2022
Second Prize of the Scholarship for Outstanding Students at Fudan University December 2021, December 2024
Third Prize of the Scholarship for Outstanding Students at Fudan University December 2022, December 2023
Professional Scholarship at Fudan University December 2022, December 2023