Ziang Hu

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Education

- **Zhejiang University** Hangzhou, China
  BA in Physics*(Honor Track); GPA: 3.73(ranks 7 in 90)* *Sept. 2015 – June. 2019*

Article

- [**1**]: Y. An, **Z. a. Hu**, Z. Huang, Y. Li and X. Lv,"Equivalence of Coefficients Extraction of One-loop Master Integrals,"arXiv:1811.05177 [hep-th].

Research Experience

- **Disorder induced topological phase transition** Westlake University
  Supervisor: Dr.Jian Li *Oct. 2018 – Present*
  - **Disordered Haldane phase**: Use numerical and analytical methods, including exact diagolnization, DMRG, tensor network, to investigate the extension of disorder induced topological phases to interaction Haldane chains.
  - **Field theoretical description**: Formulated the quantum field theory of topological Anderson insulators that applies to both non-interacting and interacting systems.
- **Equivalence of Coefficients Extraction of One-loop Master Integrals** Zhejiang University
  Supervisor: Prof.Bo Feng *Apr. 2018 – Nov. 2018*
  - **Unitary method**: Investigated the unitary method at the 1 loop level and in the background of PV-reduction, learned various techniques related to modern scattering amplitude methods including twistor momentum and BCFW shift, and acquired in-depth knowledge of helicity amplitude and the analytical properties of loop diagrams especially at 1-loop level.
  - **Problem solving**: Produced one major result independently and contributed significantly to another result.
  - **Article writing**: Played a leading role in drafting and revising the article, under Prof. Fengs guidance; acquired substantial experience in scientific writing
  - **Team working**: Coordinated and communicated efficiently with other team members; led the project by distributing tasks and summarizing results.
- **Explicitly Canceling of IR divergence** Zhejiang University
  Supervisor: Dr.Huaxing Zhu *Mar. 2018 – Sept. 2018*
  - **Subtraction method**: Investigated the dipole method and other subtraction method dealing with the 1-loop IR divergence problem; learned major modern phase integral method using the properties of Euclidean space-time and the symmetry of scattering amplitude.
  - **Baikov representation**: Discovered the connection between loop momentum integrals and phase space integrals in the Baikov representation and further developed a new method to explicitly evaluate cross sections.

Teaching Experience

- **Zhejiang University** Hangzhou
  Teaching Assistant of Atomic Physics *Sept. 2018 – Jan. 2019*
- **Harvard Association of US-China Relationship** Shanghai/Hangzhou
  Teaching Assistant/Student Intern Manager *Aug. 2016 – Mar. 2018*

Honors and Awards

- **Scholarships**: Honors Scholarship for fundamental science students in 2015-2016 and 2016-2017; Schools Second Scholarship in 2015-2016 and 2016-2017.
- **Social Practice Program Award**: Ranked first on the Social Practice Team for eliminating regional gaps in high school education.

Skills and Tests

- **Language**:Python, C, Matlab, Mathematica
- **Algorithm**: DMRG, Tensor network