SINAN ORAL

450 Circle Road, Stony Brook, NY 11790

+1-619-323-5903 sinan.oral@stonybrook.edu https://github.com/sinan-oral linkedin.com/in/sinan-oral

Education

Stony Brook University **August 2022 – Present**

M. Sc. in Physics

University of California San Diego **September 2018 – June 2022**

B. Sc. in Physics (3.97) and Mathematics (4.00) (GPA: 3.91/4.00)

Academic Interest

I am interested in the field of Quantum Computation and Mathematical Physics. The motivation behind my interest is the interdisciplinary nature of the field as related research is open to fusing ideas from physics, mathematics, and computer science. I am currently invested in exposing myself to different research areas within these field.

Research Experience

Reduced Models of Turbulence and Transitions in Stochastic Magnetic Field **September 2021 – Jun 2022**

- Undergraduate Physics Honors Thesis under the guidance of the Prof. Patrick Diamond
- Stochatization of magnetic field due to resonant magnetic perturbation to mitigate edge localized modes in H-mode
- Analyzed stochastic logistic equation with multiplicative and additive noise as simple model of saturation in the presence of stochasticity

Direct Detection of Sub-GeV Dark Matter **June 2021 – August 2021**

- Undergraduate Physics Summer Research under the guidance of the Prof. Tongyan Lin
- Studied DM-nucleus and DM-electrons scatterings and dark matter direct detection methods.
- Analytically computed the ionization form factor for hydrogen. Compared the reach curves of germanium and silicon crystal detectors to their effective hydrogen-like model for various ionization thresholds using the DarkELF module.

27 Lines on a Cubic Surface **March 2020 – June 2020**

- UCSD RTG-AGANT: Graduate directed reading for undergraduates
- Studied introductory algebraic geometry. The topics covered: affine varieties, Zariski topology, regular functions and sheaves, projective varieties, Grassmanians, Blowing up, smooth varieties.
- Presented the proof of 27 lines on a cubic surface (Cayley–Salmon theorem).

Relevant Coursework

- Introduction to QIS
- Solid State Physics
- Classical Mechanics I-II
- Electromagnetism I -II
- Mathematical Physics I-II
- Quantum Mechanics I-II
- Statistical Mechanics I
- Plasma Physics II
- Introduction String Theory
- Differential Geometry I-II
- Analysis of ODEs
- Real Analysis I-II-III
- Abstract Algebra I-II-III
- Topology
- Algebraic Geometry

Honors and Awards

UC San Diego Physical Sciences Dean's Undergraduate Award for Excellence **2021 – 2022**

- Awarded to 26 out of 4000 undergraduate students in Chemistry and Biochemistry, Mathematics, and Physics

UC San Diego Undergraduate Summer Research Award **Summer 2021**

- Scholarship for undergraduate summer research (10 weeks)

Certifications

- IBM Certified Associate Developer - Quantum Computation using Qiskit v0.2X

Technical Skills

Languages: Turkish, English, German
Software: Python, Julia, C++, Mathematica, MATLAB