Abdullah Alshaffi

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Education

Master of Science in Physics Sep 2019 - May 2022
(University of Massachusetts Dartmouth, Dartmouth, Massachusetts

Bachelor of Science in Astronomy, Mathematics Aug. 2010 - April 2015
King Abdulaziz University, Jeddah, Saudi Arabia

Publications

Super-Chandrasekhar mass Type Ia supernova event from the double-degenerate channel, **A Alshaffi**, R Fisher, B Roy, M Ferrari, S Yoshida *In Preparation.*

Talks & Summer Schools

- IVC astrostatistics and machine learning summer school 2021

Awards and Honors

Sponsorships' Management King Abdulaziz university Saudi Arabia. 2017 - 2027

- Full fund scholarship from the Kingdom of Saudi Arabia to cover tuition costs and living expenses incurred during studies for an English course, master's, and Ph.D. in the field of physics and astronomy.

Experience

Teaching Assistant in the Astronomy Department at King Abdulaziz University. 2016 - 2017

- Astronomy 201 Lab.
- General Astronomy (Assistant Instructor)

Skills

- Programming languages: Python, Mathematica, Fortran,and C++.
- Operating systems: Mac OS, Linux, Windows.
- Software: adaptive mesh refinement code FLASH, Torch, SuperNu, LaTeX, MESA , Git, and OriginLab.
- TACC Stampede2 supercomputer, and Carnie supercomputer
- Observing:
  - Set up 8 & 6 inch telescopes with tracking (MEADE).
  - SSP-5 Photomultiplier UBV
  - Coronado H-Alpha Solar Telescopes
  - Planetarium at King Abdulaziz University
  - ST-2000XM CCD Camera

Research Experiences

Super-Chandrasekhar mass Type Ia supernova event from the double-degenerate channel.
University of Massachusetts Dartmouth
Mentored by Prof. Robert Fisher.

- I led a research effort to explorer the possibility that superluminous SNe Ia may originate from differentially-rotating carbon-oxygen white dwarf mergers. I start working on hydrodynamical runs using the data provided by our collaborator Yoshida at the University of Tokyo, using the adaptive

mesh refinement code FLASH. I then follow FLASH runs with nucleosynthesis and radiation transport. The radiation transport results will help me compare the synthetic spectra of the rotating mergers against superluminous SNe Ia events such as SNLS-03D3bb and sub-Chandrasekhar and near-Chandrasekhar white dwarf models.

Relevant Coursework

Physics: Classical Mechanics, Electromagnetism, Quantum Mechanics, Statistical Mechanics and Thermal Physics, General Relativity, Mathematical Physics.

Astronomy: Stellar Radiate, Stellar Interior, Computer Applications in Astronomy, Variable & Binary Stars, Celestial Mechanics, Solar Physics, Galaxies.

Mathematics: Calculus, Differential Equations, Linear Algebra, Complex Analysis, Real Analysis.

Languages

Arabic (Native)
English (Advanced)

Outreach

Member of astronomical activity at King Abdulaziz University. 2012 - 2015

Presenting lessons and presentations using Planetarium at King Abdulaziz University for students visiting from schools.

Volunteer in Space Week. 2013

Extracurricular Activities

Backpacking

- I love hiking, especially those that require hard effort. Also, I like camping in the forests and deserts.