Amirmohammad Sabzevari

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Gender: Male   **Date of birth:** 9 Jan 2002   **Nationality:** Iranian

EDUCATION AND TRAINING

[7 Nov 2020 – Current]

B.SC in Physics

Sharif University of Technology

City: Tehran
Country: Iran
Field(s) of study: Natural sciences, mathematics and statistics: *Physics*

DIGITAL SKILLS

Document preparation system: LaTeX | E-mail use | Python (matplotlib, pandas, numpy, etc) | Social Media: Whatsapp, Telegram, etc | Microsoft Office (Outlook, Excel, Word, PowerPoint)

SELECTED COURSES

[Sep 2022 – Feb 2023] **Quantum Mechanics 1**

Tutor: Dr. Laleh Memarzedeh

Grade: 20.0/20.0

[Feb 2023 – Jul 2023] **Quantum Mechanics 2**

Tutor: Dr. Laleh Memarzedeh

Grade: 18.5/20.0

[Feb 2023 – Jul 2023] **Cosmology**

Tutor: Dr. Shant Baghram

Grade: 19.0/20.0

[Jul 2023 – Sep 2023] **Astronomy Laboratory 1**

Tutor: Dr. Reza Rezaei

Grade: 20.0/20.0

EXTRACURRICULAR COURSES

Group Theory

Organizer: Maktabkhooneh

Computational Physics

Organizer: Sharif OCW

PROJECTS

Alternative Models for Lambda-CDM

This work is associated with the "Cosmology" Course. In this project, we gathered, calculated and summarized some alternative cosmological models for the current

"Lambda-CDM" model. The project is written by LaTeX and its PDF file is available in the link below:

Link: https://github.com/Amir-sabz/Cosmology/blob/main/Alternative Models for Lambda-CDM.pdf

Visualizing the evolution of dynamic cosmological parameters

This work is associated with the "Cosmology" Course. I used the real data from the Planck satellite to simulate the evolution of Hubble and deceleration parameters and their derivatives. The Jupyter notebook code is available in the link below:

Link: https://github.com/Amir-sabz/Cosmology/blob/main/Standard model parameters.ipynb

Simulating and visualizing Self-similar Fractals

This work was associated with the "Computational Physics" course. Most of the fractals are simulated by two different algorithms (Deterministic and Random). The Jupyter notebook codes are available in the link below:

Link: https://github.com/Amir-sabz/Computational_Physics/tree/main/Fractals

Ballistic Deposition Simulation

This work was associated with the "Computational Physics" course. The project is about simulating randomly-falling particles on a 1-D layer in different boundaries and conditions. The Jupyter notebook code is available in the link below:

Link: https://github.com/Amir-sabz/Computational_Physics/blob/main/Ballistic Deposition.ipynb

Analysing the Sun image

This work is associated with the "Astronomy Laboratory 1" Course. I used a telephoto image of the Sun to calculate its center of mass, its intensity behavior and fitting an approximation function to it to visualize the "Limb Darkening" effect. The Jupyter notebook code is available in the link below:

Link: https://github.com/Amir-sabz/Astro_Lab1/tree/main/Sun

Calculating the Hubble's Constant from observational data

This work is associated with the "Astronomy Laboratory 1" Course. I used observational parameters of some close and mid-distant galaxies to calculate the Hubble's constant. The code is in Python language and is available in the link below:

Link: https://github.com/Amir-sabz/Astro_Lab1/tree/main/Hubble's Constant

Fitting a Point Spread Function (PSF) on different stars

This work is associated with the "Astronomy Laboratory 1" Course. I used real astronomical image to find approximately 20 stars and fit a PSF to their intensity. The code is in Python language and is available in the link below:

Link: https://github.com/Amir-sabz/Astro_Lab1/tree/main/PSF

Scattering of photon by a charged particle

This work is associated with the "Electromagnetism 2" Course. We explained the photon scattering by a charged particle (specially in the atmosphere) and calculate its result in some low and high frequency limits. The project is written by LaTeX and its PDF file is available in the link below:

Link: https://github.com/Amir-sabz/Electromagnetism-2/blob/main/Scattering.pdf

VOLUNTEERING

[Aug 2022 – Current] **Head of the Student Astronomy Group**   Sharif University of Technology, Tehran, Iran

[Sep 2023 – Current] **Participant of The Student Scientific Association of the Physics Department**
Sharif University of Technology, Tehran, Iran

LANGUAGE SKILLS

Mother tongue(s): Persian

Other language(s): English

WORK EXPERIENCE

[Sep 2021 – Feb 2023] **Teacher of Astronomy and Astrophysics Olympiad**

City: Tehran
Country: Iran