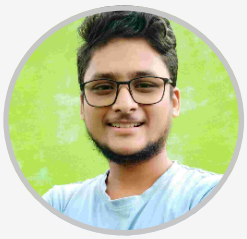

Suman Dey

Date of birth: 09/03/1998 | **Nationality:** Indian | **Gender:** Male | (+91) 9830350942 |

dey.suman.vbu@gmail.com | 03323081942@visva-bharati.ac.in |

Village and P.O.: Deulpur, House no.: n0019, 711411, Howrah, India

WORK EXPERIENCE

08/07/2022 – CURRENT – Hiroshima, Japan
RESEARCH INTERN IN OBSERVATIONAL ASTROPHYSICS – GUIDE: DR. ANJASHA GANGOPADHYAY, ASST. PROF., HASC, HIROSHIMA UNIVERSITY, JAPAN

Project: Observational astrophysics especially transients like a supernova, photometric and spectroscopic evolution of the peculiar type supernova.

25/06/2022 – CURRENT – Bengaluru, India
RESEARCH PROJECT ON THEORETICAL PHYSICS – GUIDE: DR. SAYANTAN CHOUDHURY, QASTM GROUP, INTERNATIONAL CENTRE FOR THEORETICAL SCIENCES (ICTS)

Project:Numerical Bootstrap in Quantum Mechanics

04/2022 – CURRENT – Bengaluru, India
RESEARCH PROJECT ON GAMMA-RAY ASTRONOMY - UNDER VISITING STUDENT PROGRAM (VSP) – GUIDE: DR. NAYANTARA GUPTA, RAMAN RESEARCH INSTITUTE, BENGALURU, INDIA

Project: An observational study of Pulsar wind nebulae (PWNe) for the opacity of the Universe in gamma-rays using **HAWC** and **LHAASO** sources

03/2022 – CURRENT – Santiniketan, India
RESEARCH PROJECT ON EXTRAGALACTIC ASTRONOMY – GUIDE: DR. BISWAJIT PANDEY, VISVA-BHARATI UNIVERSITY, SANTINIKETAN, INDIA

Project topic: Testing Anisotropy in the Universe Using the **HyperLeda database.**
Software: **HEALPix**

12/2021 – 06/2022 – Bengaluru, India
RESEARCH PROJECT ON EARLY UNIVERSE COSMOLOGY – GUIDE: DR. SAYANTAN CHOUDHURY, QASTM GROUP, INTERNATIONAL CENTRE FOR THEORETICAL SCIENCES (ICTS)

Project: Path Integral formulation in a non-equilibrium system in the context of primordial cosmology.

10/2020 – 12/2020 – Bangalore, India
RESEARCH INTERNSHIP ON ASTROPHYSICS & ASTRONOMY – GUIDE: SUNDAR M N, SOCIETY FOR SPACE EDUCATION RESEARCH AND DEVELOPMENT (SSERD), BANGALORE, IN

Project: Cross-matching Between Optical and Radio Catalogues using K-D Tree algorithm for Detection/Classification of Galaxies

https://www.sserd.org/

https://www.sserd.org/2021/01/10/unleashing-candescent-universe-with-cosmic-data-crew-sserd-online-space-research-internship/

02/2022 – CURRENT – Santiniketan, India
RESEARCH PROJECT ON GALACTIC ASTRONOMY – GUIDE: DR. BISWAJIT PANDEY, VISVA-BHARATI UNIVERSITY, SANTINIKETAN, INDIA

Project topic: Investigating the Influence of Dark Matter Halo on Galactic bar formation in the Milky Way using the **GAIA database.**
Software: **HEALPix**

02/09/2020 – CURRENT
SUBJECT MATTER EXPERT IN ADVANCED PHYSICS – CHEGG INDIA PRIVATE LIMITED

09/2020 – 04/2021 – Kolkata, India
RESEARCH PROJECT ON PLASMA ASTROPHYSICS – GUIDE: DR. SWARNIV CHANDRA, INSTITUTE OF NATURAL SCIENCES AND APPLIED TECHNOLOGY, KOLKATA, WB

Project: Two-stream Plasma Instability as a Potential Mechanism for Particle Escape in the Venusian Ionosphere

07/2020 – 09/2021 – India
M.SC. DISSERTATION - "NON-RELATIVISTIC QUANTUM MECHANICAL MOTION IN A UNIFORMLY ACCELERATED FRAME" – SUPERVISOR: PROF. SOMENATH CHAKRABORTY, VISVA-BHARATI UNIVERSITY, SANTINIKETAN, INDIA

07/2020 – 09/2020 – Kolkata, India
SUMMER WORKSHOP ON PLASMA PHYSICS – GUIDE: DR. SWARNIV CHANDRA, INSTITUTE OF NATURAL SCIENCES AND APPLIED TECHNOLOGY, KOLKATA, WB

Project: Stable Parametric Regions of Rogue Waves for Highly-Energetic Pair Plasmas.

EDUCATION AND TRAINING

10/08/2019 – 17/09/2021 – Santiniketan, West Bengal, Bolpur, India
M.SC. IN PHYSICS (ASTROPHYSICS AND COSMOLOGY) – Visva-Bharati University

Field(s) of study
- Physics

Thesis: Non Relativistic Quantum Mechanical Motion in a Uniformly Accelerated Frame

CGPA - 7.78/10.00, Graded 'A+' | EQF level 7 | http://visvabharati.ac.in/index.html

01/06/2015 – 28/05/2018 – Kolkata, West Bengal, Kolkata, India
B.SC. IN PHYSICS – University of Calcutta

Field(s) of study
- Physics

Marks - 56.62%, Graded 'B' | EQF level 6 | https://www.caluniv.ac.in/

2013 – 2015 – Deulpur, Howrah, India
HIGHER SECONDARY (10+2) WITH PHYSICS, CHEMISTRY, MATHEMATICS – Deulpur High School (Board of Education: West Bengal Council of Higher Secondary Education)

Field(s) of study
- Physics
- Chemistry
- Mathematics

Passed with 79.60% marks, Graded 'A' | EQF level 5 | https://deulpurhs.webs.com/

PUBLICATIONS

Formation of nonlinear stationary structures in ionospheric plasma

https://doi.org/10.1109/TPS.2022.3166685 – 2022
G. Manna, **S. Dey**, J. Goswami, S. Chandra, J. Sarkar, and A. Gupta, "Formation of nonlinear stationary structures in ionospheric plasma," IEEE Transactions on Plasma Science, **50(6)**, pp. 1464-1476, 2022.

Two-stream plasma instability as a potential mechanism for particle escape in the Venusian ionosphere

https://hal.archives-ouvertes.fr/hal-03706611 – 2022
S. Dey, S. Ghosh, D. Maity, and S. Chandra, "Two-stream plasma instability as a potential mechanism for particle escape in the Venusian ionosphere," Pramana - Journal of Physics (Accepted for Publication), 2022.

Non-Relativistic Quantum Mechanical Motion in a Uniformly Accelerated Frame

http://dx.doi.org/10.13140/RG.2.2.29525.70880 – 2022
S. Dey, S. Chakraborty, "Non-Relativistic Quantum Mechanical Motion in a Uniformly Accelerated Frame," Quantum Studies: Mathematics and Foundations (Under Revision), 2022

Nonlinear Excitations in Dust-Ion Acoustic Waves and the Formation of Rogue Waves in Stable Parametric Region in a 3-Component Degenerate Plasma

http://140.105.16.144/index.php/aphysrev/article/viewPDFInterstitial/1870/641 – 2021
Samanta, P; De, A; **Dey, S.**; Maity, D; Ghosh, A; Chandra, S. (2021). Nonlinear Excitations in Dust-Ion Acoustic Waves and the Formation of Rogue Waves in Stable Parametric Region in a 3-Component Degenerate Plasma. The African Review of Physics, 15.

Chaotic Excitations of Rogue Waves in Stable Parametric Region for Highly-Energetic Pair Plasmas.

http://140.105.16.144/index.php/aphysrev/article/viewPDFInterstitial/1873/644 – 2021
Dey, S., Maity, D., Ghosh, A., Samanta, P., De, A., & Chandra, S. (2021). Chaotic Excitations of Rogue Waves in Stable Parametric Region for Highly-Energetic Pair Plasmas. The African Review of Physics, 15.

HONOURS AND AWARDS

30/05/2022
Qualified for Final Round in International Astronomy and Astrophysics Competition: IAAC 2022 – International Astronomy and Astrophysics Competition: IAAC

https://iaac.space/c/Certificate-PF-2022-F08DA98EF9E-3394ba6544b70679ae6fa001a41881a6.pdf

04/2022
Research Fellowship under Visiting Student Program (VSP) – Raman Research Institute, Bengaluru, India

17/03/2022
Cleared The Graduate Aptitude Test in Engineering (GATE) with GATE Score 359, AIR-2731 – Organizing Chair, GATE 2022, GATE-JAM Office, IIT Kharagpur, West Bengal, India - 721302

Best Poster Presentation in International Conference on Advances in Plasma Science and Technology (ICAPST) 2021 – Sri Shakthi Institute of Engineering and Technology Coimbatore - 641062

Got 4th place and was awarded for best Poster Presentation in International Conference on Advances in Plasma Science and Technology (ICAPST) 2021

Swami Vivekananda Merit-cum means Scholarship – West Bengal Council of Higher Secondary Education

This is given to promising students having percentage above 75 in Higher Secondary Science.

DIGITAL SKILLS

My Digital Skills

OS

Operating Systems (Windows, Linux)

Programming

SQL (MySQL) | C/C++ | Fortran | LaTeX | Python

Software

HEALPix | GAMERA

CERTIFICATIONS, INTERESTS

06/2020 – 08/2020
Astronomy: Exploring Time and Space

University of Arizona, US – Through Coursera Platform
Credential ID: GC3NY2G5FY2E
https://www.coursera.org/account/accomplishments/verify/GC3NY2G5FY2E?utm_source=link&utm_medium=certificate&utm_content=cert_image&utm_campaign=sharing_cta&utm_product=course

04/2020 – 06/2020
Python Certificate Course with CloudXLab

Indian Institute of Technology, Roorkee, IN
https://drive.google.com/file/d/1qmEvmhNVBkpsZNAAxF8zxv5DYTb0mk8W/view

PRESENTATIONS

International Conference on Advances in Plasma Science and Technology (ICAPST) 2021

Coimbatore, INDIA - **Poster Presentation**.
Title: **Two Stream Instability and Particle Escape in The Venusian Ionosphere**

Scholars Colloquium on Plasma Physics 2020

Physics Joint • An Association of Physicist, Kolkata - 700032, INDIA - **Oral Presentation**.
Title: **Stable Parametric Regions of Rogue Waves for Highly-Energetic Pair Plasmas.**

WORKSHOPS & SCHOOLS:

16/05/2022 – 28/05/2022
First Indian Association for General Relativity and Gravitation (IAGRG) School on Gravitation and Cosmology 2022

The series is mainly intended for graduate students working (or starting to work) on Gravitational Physics, Cosmology, and related areas.
Organising Committee: P Ajith (ICTS Bangalore), Sudipta Das (Visva-Bharati), Archana Pai (IIT Bombay), Sudipta Sarkar (IIT Gandhinagar), Anjan Anjan Sen (Ahmedabad University, CTP JMI), Amitabh Virmani (CMI, Chennai).
Funding institute for the first IAGRG School: Chennai Mathematical Institute (CMI), Chennai.
https://sites.google.com/iitgn.ac.in/iagrgschool2022

2021
International Summer Program

The International Summer Program at the Graduate School of Science (GSS) of Osaka University is an intensive research internship for overseas students majoring in natural sciences and related fields in sciences.
https://www.sci.osaka-u.ac.jp/en/news/2532_1/

2021
International Summer School on ISM from Galaxies, from Epoch to the Reionization to the Milky Way (online)

Organized by Programme National de Physique et Chimie du Milieu Interstellaire (PCMI) of CNRS/INSU and Programme National de Cosmologie et Galaxies of CNRS/INSU.
https://ismgalaxies2021.sciencesconf.org/

DIY PROJECTS

Ultrasonic Levitation

Hardware: Arduino UNO, Ultrasonic Sensor, **Programming Lang.:** C++
Details: A reflector has been placed at the right distance away from a transducer, the acoustic levitator creates a standing wave. When the orientation of the standing wave is parallel to the pull of gravity, portions of the standing wave have constant downward pressure, and others have constant upward pressure. The nodes have very little pressure. I placed a small object there and it levitates.
https://drive.google.com/file/d/1jVDtTEAr1-g4KBjOwG2aKFhX5mqod78y/view?usp=sharing

Dancing Humanoid

Hardware: Arduino UNO, Micro Servo, **Programming Lang.:** C++
Details: A humanoid walking robot that uses Arduino and can walk, jump and do some dances.
https://drive.google.com/file/d/1xbTkvahkigvzQQs6vpiskCM7eoXV7Qx8/view?usp=sharing