

## REPORT OF SEMINAR-CUM-WORKSHOP

- **TITLE OF THE EVENT/ PROGRAMME:** SEMINAR-CUM-WORKSHOP
- **THEME OF THE EVENT/ PROGRAMME:** PERIODOGRAM REGRESSION: A TWO-STAGE MIXED EFFECTS APPROACH FOR MODELLING MULTIPLE INTEGER-VALUED TIME-SERIES OF TROPICAL CYCLONE FREQUENCY
- **ACADEMIC SESSION:** 2024 - 25
- **DATE:** 27<sup>th</sup> January, 2025, at 12:00 Noon
- **VENUE:** PROF. P.C. MAHALANOBIS MEMORIAL LABORATORY, THIRD FLOOR, MAIN BUILDING, ASUTOSH COLLEGE
- **OBJECTIVE/ PURPOSE:** The objective of the Seminar-cum-Workshop is to introduce participants to advanced statistical methodologies used in environmental data analysis, with a focus on time-series modeling of discrete-valued climatic phenomena. The seminar-cum-workshop aims to demonstrate practical modeling approaches for analyzing tropical cyclone frequency data and equip students with the theoretical and computational tools necessary for conducting research in the field of environmental statistics and applied time-series analysis.
- **SPEAKER / RESOURCE PERSON:** Dr. Sourav Das, Senior Lecturer, Applied Statistics, Curtin University, Australia.
- **ORGANIZED BY:** Department of Statistics in collaboration with IQAC, Asutosh College.
- **TARGET AUDIENCE/ PARTICIPANTS:** Semester 3 and Semester 5 Students of the Department.
- **NUMBER OF PARTICIPANTS:** 25
- **ATTENDANCE SHEET:**

Name	Semester
Soumay Nandy	3
Shilpi Ghosh	3
Soumyadeb Manna	3
Arko Basak	3

Prosun Kotal	3
Souparna Ghosh	3
Subhadeep Dey	3
Soumyadeep Pathak	3
Anulekha Dutta	3
Sritama Mondal	3
Prattoy Biswas	3
Sneha Yadav	3
Debjyoti Roy	3
Manik Mondal	3
Pratanjali Kar	3
Soumik Barman	3
Saptaparno Roy	5
Soumyadeep Basak	5
Aranyo Sengupta	5
Zubin Ghosh	5
Swastik Bhattacharya	5
Manish Shaw	3
Md Alif Farhan Alam	3
Rishab Pradhan	3
Sourit Mitra	5

- BRIEF REPORT ABOUT THE EVENT/ PROGRAMME:** The session was aimed at introducing participants to an advanced modeling framework suitable for analyzing complex climatic datasets, particularly those involving discrete time-series such as tropical cyclone frequency records. Dr. Sourav Das, an expert in the field of time-series analysis and environmental statistics, delivered a highly insightful talk covering both the theoretical foundation and practical application of periodogram-based regression models. He emphasized on the importance of spectral analysis in understanding cyclic patterns in time-series data, the structure and utility of mixed effects models in capturing inter-series variability, A live demonstration of the methodology using real-world tropical cyclone datasets was conducted, which provided participants hands-on experience with data handling and model fitting using statistical software.

- **EXPECTED OUTCOME:** Participants are expected to gain in-depth knowledge of periodogram regression and two-stage mixed effects models, particularly in the context of modeling multiple integer-valued time-series data. They will be able to apply statistical techniques learned during the workshop to real-world problems, especially those involving climate data such as tropical cyclone frequency. Sessions of these type are expected to foster interest in interdisciplinary research.
- **GEO-TAGGED PHOTOGRAPHS:**



