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Study the linkage between large-scale wave structures and day-to-day occurrence variability of equatorial plasma bubbles using GRBR-TEC measurements and EAR observations from kototabang

Under the PBASE program, I visited the Research Institute for Sustainable Humanosphere (RISH), Kyoto University, located in Kyoto, Uji, Japan from November 1 to 30, 2023. During my visit, Prof. Tatsuhiro Yokoyama, acted as a local host and supervisor for the beacon data analysis.

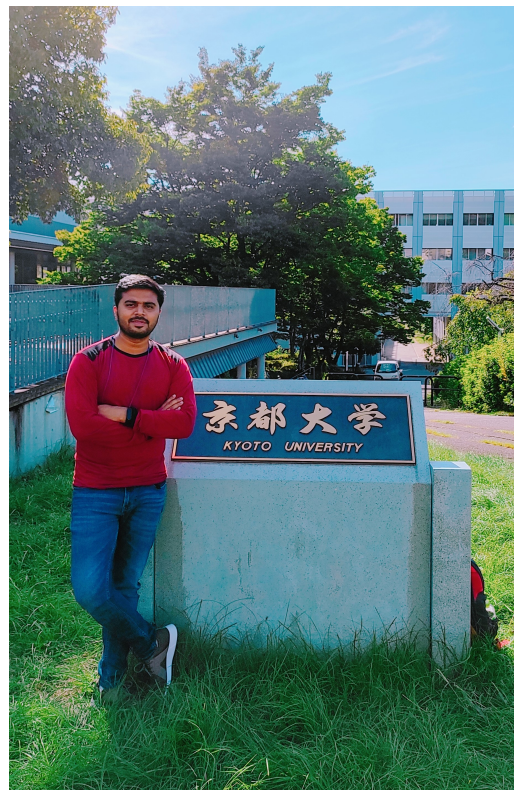
The main purpose of my visit to RISH, Kyoto University was to collect the beacon transmission data from Coherent Electromagnetic Radio Tomography (CERTO) on-board Communication/Navigation Outage Forecasting System (C/NOFS) received by the ground-based GNU radio beacon receiver (GRBR) located at Kototabang (0.20° S, 100.32° E, 10.63° S mag. latitude) for the total-electron content (TEC) measurements. These TEC profiles will be further analyzed to study the presence of large-scale wave structures (LSWS) in the pre-sunset ionospheric electron density and its linkage with the equatorial plasma bubble (EPB) onset as observed by the Equatorial Atmospheric Radar (EAR) located at Kototabang.

During the visit, I engaged in insightful discussions with Prof. M. Yamamoto, the developer of GRBR. Prof. M. Yamamoto played a key role in elucidating the data and analysis techniques essential for deriving biases in TEC measurements. These constructive conversations significantly contributed to my ability to analyze the data effectively, resulting in preliminary findings that are slated for publication in the near future.

Additionally, I had the privilege to present my prior research at RISH through a seminar, fostering interactions with other dynamic researchers in the department. This visit to RISH, Kyoto University, was indispensable for my current work. The in-depth discussions with Prof. T. Yokoyama and Prof. M. Yamamoto proved highly effective for advancing my proposed research.

Throughout my stay, I lodged at the Ohbaku International House, conveniently situated near the Uji campus. The university boasts an array of dining choices and convenience stores either on campus or in close proximity. Additionally, nearby shopping malls, accessible via a brief 10-15 minutes train ride, features several supermarkets and various clothing stores. I also got an option to explore nearby Indian restaurants for various food options. Beyond the practical amenities, Kyoto also offered proximity to captivating tourist attractions. Exploring nearby cultural and historical sites added an enriching dimension to my stay, allowing me to immerse myself in the local heritage and ambiance.

In conclusion, my tenure at Kyoto University not only yielded noteworthy scientific findings, relevant to the atmospheric science community and deserving of dissemination in a scholarly journal, but also imbued me with a cultural immersion essential for holistic personal and professional development.



A picture of mine during the visit to RISH, Kyoto University