THE UNIVERSITY OF THE SOUTH PACIFIC

School of Engineering and Physics

From: Professor Sushil Kumar, Professor of Physics, SEP, FSTE.

Subject: 2019 AGU Fall Meeting (Scientific Conference), San Francisco, California, USA, 9-13 December 2019.

Report: 2019 AGU Fall Meeting

2019 AGU fall meeting attracted more than 25 thousand participants in various areas such as; Atmospheric Sciences, Hydrological Sciences, Interdisciplinary Geosciences, Ocean Sciences, Planetary Sciences, Solar & Terrestrial Sciences, Aeronomy, Geophysical Sciences, Natural Hazards, Space Weather and Consequences, etc. I have a strong interest in areas of Natural hazards, Space Weather and Consequences and other areas such as Atmospheric Sciences, Aeronomy, and Solar & Terrestrial Sciences.

I chaired an oral and a Poster Session: Chair and Convener

Chairperson and Convener, of the session, NH31B "*Ionospheric and Atmospheric Monitoring of Natural Hazards and Man-Made Events I*" at 2019 AGU Fall Meeting, San Francisco, California, USA, 09-13 December 2019.
Conveners (Primary Convener-Prof. Xing Meng, Conveners – Prof. Sushil Kumar, Dr. Lucie Rolland, Prof. Steven A Cummer).
Chairs (Xing Meng, Jet Propulsion Laboratory, California Institute of Technology, and Sushil Kumar, The University of the South Pacific).

Presented followings TWO papers.

1. **Sushil Kumar** and Sarvesh Kumar, Equatorial Ionospheric Response to the Space Weather Events of 4-10 September 2017.

2. Paolo A. A. L. Redoblado and **Sushil Kumar,** Lightning activity and VLF anomalies associated with two intense Tropical Cyclones in the South Pacific Region.

I met with several scientists during the oral and poster sessions that I attended during 10-12 December mainly in the areas of Aeronomy and Natural Hazards. In particular, I would like to emphasize the details about the following meeting;

- A lunch meeting was held with Dr. L. C. Gentile and her two colleagues from Air Force Research Laboratory (AFRL), 12 December with the main discussion on installing atmospheric equatorial radar at the Kiribati Campus of The University of the South Pacific (USP) under our project funded by AFRL.

- Attended business meeting of the Natural Hazards Group on 10 December and had discussions with some scientists working in the relevant areas, in particular, with those working on applications of Global Navigation Satellite Systems (GNSS) to Positioning, Navigation and Timing. The GNSS is detrimental to the time delays produced by the troposphere and ionosphere under extreme terrestrial and space weather conditions.

- During the poster session, I met with the researchers working in the area of consequences of space weather effects on ionospheric current systems, in particular, the geomagnetically induced currents (GICs) at low latitudes. GICs at high latitudes may affect power distribution networks, pipelines and other long conductors.

- Apart from the above meetings, I had discussions with several scientists working in the area of ground and satellite-based remote sensing of the ionosphere under earthquakes, tropical cyclones and space weather conditions.

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Professor of Physics: Space and Atmospheric Physics
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