School of Engineering and Physics

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

Subject: 2015 AGU Fall Meeting (Scientific Conference), San Francisco, California, USA, 14 to 18 December 2015.

Report:

The AGU fall meeting attracted about 22 thousand participants in various areas such as; Atmospheric Sciences, Hydrological Sciences, Interdisciplinary Geosciences, Ocean Sciences, Planetary Sciences, Solar & Terrestrial Sciences, Geophysical Sciences, Natural hazards, Space Weather and Consequences etc. I have strong interest in areas Natural hazards, Space Weather and Consequences and other areas such as Atmospheric Sciences, Planetary Sciences, and Solar & Terrestrial Sciences.

I chaired conference Session: Chair and Primary Convener

Space Weather Hazards of Perturbed Ionospheric Currents: Monitoring and Early Warning, Sushil Kumar (Chair and Primary Convener) and two other conveners.

And presented the followings paper.

VLF PERTURBATIONS ASSOCIATED WITH SOLAR ECLIPSES OF NOVEMBER 2012 AND MAY 2013 IN THE SOUTH PACIFIC REGION, by Sushil Kumar and Abhikesh Kumar

Lightning activity variation during the evolution of tropical cyclones in the southwest Pacific region, by Ashneel Chandra, Sushil Kumar and Abhikesh Kumar

I met with several scientists such as Prof. Criag J Rodger, Otago University, Prof. Steven A. Cummer Electrical and Computer Engineering Department Duke University, Dr. Mirris Cohen, GTU, USA, Dr. Vadim S. Bobrovskiy Distant School, COSMIC-METEO-TECTONICS Petropavlovsk-Kamchatka, RUSSIA. In particular, I would like to emphasize the details about following meeting;

- A meeting was held with Dr. Todd Pedersen and Mr R. Todd Parris on 16 December at 5 pm with the main discussion on installing atmospheric equatorial radar at the Kiribati Campus of The University of the South Pacific (USP). The ideal location for this was identified at Christmas Island. Other logistic requirements were discussed in details. During the meeting it was realized that Dr Keith Groves is interested in setting

us some stations for the measurement of TEC and scintillation in the South Pacific region which is relatively an unexplored area in terms of space weather effects in the upper ionosphere. Also to fix the problem with current GPS system at school of Engineering and Physics, USP.

- A meeting was held with Dr Keith Groves and Mr R. Todd Parris on 17 December at 10 am during the tea break and the possibility of future collaborations in the area of ionospheric effects of space weather studies including the South Pacific Region was discussed.

- During the poster session on Space Weather Hazards of Perturbed Ionospheric Currents: Monitoring and Early Warning" I discussed with several colleagues to name some of them, Dr. C. Waters, Dr. Brett Carter, Prof. Fredrick William Menk, on the consequences of space weather effects on ionospheric current systems, in particular the geomagnetic induced currents (GICs) at low latitudes that may affect power distribution networks, pipelines and other long conductors.

- Apart from above meetings, I had discussions with several scientists working in the area of ELF-VLF remote sensing of the D-region ionosphere and space weather effects in the lower (D-region) ionosphere.

The collaborations with Dr. Vadim S. Bobrovskiy Distant School, COSMIC-METEO-TECTONICS Petropavlovsk-Kamchatka, RUSSIA, are in progress of developing a joint research proposal that may accommodate a PhD student.

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(**Dr. Sushil Kumar)**
Associate Professor of Physics
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