

Name of the Faculty: Dr. Suman Ray

Designation: Govt. approved PTT

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Qualification: M.Sc., Ph.D.

Research Experience: Working in the field of Astrophysics from last 10 years.

Seminar/Conference/Workshop Attended (last 5 years):

- 1) Attended “**Atmospheric Electricity Phenomena and Natural Hazards**” jointly organized by Department of Atmospheric Sciences, University of Calcutta, Kolkata, & Indian Centre for Space Physics, Kolkata, on 5th May, 2017.
- 2) Attended “**Natural Disaster Phenomena: Contemporary Developments**” organized by Department of Atmospheric Sciences, University of Calcutta, Kolkata, on 26th Feb, 2016.
- 3) Attended “**40th COSPAR Scientific Assembly**” during 2nd to 10th August, 2014, at **Moscow State University, Moscow, Russia**.
- 4) Attended “**ISRO Respond Review Meeting**” during 20th to 21st February, 2014 at Physical Research Laboratory (PRL), Ahmedabad, India.
- 5) Attended “**ISRO Respond Review Meeting**” during 8th to 9th February, 2013 at PRL, Ahmedabad, India.

Publications:

IN JOURNALS :

- 1) “Ionospheric anomaly due to seismic activities-III: correlation between night time VLF amplitude fluctuations and effective magnitudes of earthquakes in Indian sub-continent” by **S. Ray**, S. K. Chakrabarti, S. K. Mondal, S. Sasmal, *Nat. Hazards Earth Syst. Sci.*, 11, 2699-2704, 2011.
- 2) “Precursory effects in the nighttime VLF signal amplitude for the 18th January, 2011 Pakistan earthquake” by **S. Ray**, S. K. Chakrabarti and S. Sasmal, *Ind. J. Physics*, 86(2), 85-88, 2012.
- 3) “VLF signals in summer and winter in the Indian sub-continent using multi-station campaigns” by Sandip K. Chakrabarti, S. K. Mondal, S. Sasmal, S. Pal, T. Basak, S. Chakrabarti, D. Bhoomik, **S. Ray**, S. Maji, A. Nandi, V. K. Yadav, T. B. Kotoch, B. Khadka, K. Giri, S. K. Garain, A. K. Choudhury, N. N. Patra, N. Iqbal, *Ind. J. Physics*, 86(5), 323-334, 2012.

- 4) "VLF campaign during the total eclipse of July 22nd, 2009: Observational results and interpretations" by S. K. Chakrabarti, S. Pal, S. Sasmal, S. K. Mondal, **S. Ray**, T. Basak, S. K. Maji, B. Khadka, D. Bhowmick, A. K. Chowdhury, *Journal of Atmospheric and Solar Terrestrial Physics*, 86, 65–70, 2012.
- 5) "A Study on the behaviors of the terminator shifts of the VLF signals using the multiple VLF propagation paths during the Pakistan earthquake, occurred on 19th Jan., 2011" by **S. Ray** and S. K. Chakrabarti, *Nat. Hazards Earth Syst. Sci.*, 13, 1501-1506, 2013.
- 6) "Unusual behavior of Very Low Frequency signal during the earthquake at Honshu/ Japan on 11 March, 2011" by S. Sasmal, S. K. Chakrabarti and **S. Ray**, *Ind. J. Physics*, 88(10), 1013-1019, 2014.
- 7) "Modeling of the lower ionospheric response and VLF signal modulation during a total solar eclipse using ionospheric chemistry and LWPC", by Suman Chakraborty, Sourav Palit, **Suman Ray**, Sandip K. Chakrabarti, *Astrophys Space Sci*, 361 (2), 1-15, 2016.
- 8) "Inverse Problem in Ionospheric Science: Prediction of Solar Soft-X-ray Spectrum from Very Low Frequency Radiosonde Results" by Sourav Palit, **Suman Ray**, and Sandip K. Chakrabarti, *Astrophys Space Sci*, 361 (5), 1-11, 2016.
- 9) "Numerical modeling of possible lower ionospheric anomalies associated with Nepal earthquake in May, 2015" by Suman Chakraborty, Sudipta Sasmal, Tamal Basak, Soujan Ghosh, Sourav Palit, Sandip K. Chakrabarti and **Suman Ray**, *Advances in Space Research*, 60, 1787-1796, 2017.
- 10) "Study of long term effect of Solar UV and X-ray radiation on the VLF signals" by Dipak Sankia, **Suman Ray**, Sandip K. Chakrabarti, (Submitted to ASR).
- 11) "Investigation of magnetosphere-ionosphere coupling effect on some reported seismic ionospheric precursors" by Victor U. J. Nwankwo, Sandip K. Chakrabarti, Sudipta Sasmal and **Suman Ray**, (Submitted to JGR).

IN PROCEEDINGS :

- 1) 'Correlation between seismic events and anomalous VLF day-length for west-east and east-west propagation paths' by **S. Ray**, S. K. Chakrabarti and S. Sasmal, *General Assembly and Scientific Symposium (URSI GASS), 2014 XXXIth URSI, IEEE*, DOI: 10.1109/URSIGASS.2014.6929823.
- 2) 'Unusual shifts in terminator times of the VLF signals before the Pakistan earthquake (M=7.4), occurred on 18th Jan., 2011' by **S. Ray** and S. K. Chakrabarti, *General Assembly and Scientific Symposium (URSI GASS), 2014 XXXIth URSI, IEEE*, DOI: 10.1109/URSIGASS.2014.6929819.
- 3) 'Studies of precursors of earthquakes using anomalies in very low frequency signal' by S. Sasmal, S. K. Chakrabarti and **S. Ray**, *General Assembly and Scientific Symposium (URSI GASS), 2014 XXXIth URSI, IEEE*, DOI: 10.1109/URSIGASS.2014.6929820.

- 4) 'Studies of VLF signal anomalies due to earthquake' by S. K. Chakrabarti, S. Sasmal, **S. Ray** and Bakul Das, *General Assembly and Scientific Symposium (URSI GASS), 2014 XXXIth URSI, IEEE*, DOI: 10.1109/URSIGASS.2014.6929580.
- 5) 'Study of the anomalous behaviors of the ionosphere during earthquake for VTX-Malda Baseline' by **S. Ray**, S. K. Chakrabarti, S. Sasmal and A. Choudhury, *AIP Conference Proceedings*, 1286, 298-308, 2010, ISBN: 978-0-7354-0841-8.
- 6) 'Precursor of earthquake using night time VLF amplitude' by **S. Ray** and S. K. Chakrabarti, *General Assembly and Scientific Symposium, 2011 XXXth URSI, IEEE*, DOI: 10.1109/URSIGASS.2011.6051045, ISBN: 978-1-4244-5117-3.
- 7) 'Anomalous behaviors of the VLF Signals before earthquakes for VTX-Malda propagation path' by **S. Ray** and S. K. Chakrabarti, *General Assembly and Scientific Symposium, 2011 XXXth URSI, IEEE*, DOI: 10.1109/URSIGASS.2011.6051047, ISBN: 978-1-4244-5117-3.
- 8) 'Result of VLF Campaigns in Summer and Winter in Indian sub-continent' by S. K. Chakrabarti, S. Pal, S. Sasmal, S. K. Mondal, **S. Ray** and T. Basak, *General Assembly and Scientific Symposium, 2011 XXXth URSI, IEEE*, DOI: 10.1109/URSIGASS.2011.6051007, ISBN: 978-1-4244-5117-3.
- 9) 'VLF observation results of total eclipse of 22nd July, 2009 by ICSP team' by S. K. Chakrabarti, S. Pal, S. Sasmal, S. K. Mondal, **S. Ray**, T. Basak and S. Maji, *General Assembly and Scientific Symposium, 2011 XXXth URSI, IEEE*, DOI: 10.1109/URSIGASS.2011.6051005, ISBN: 978-1-4244-5117-3.

CHAPTER IN BOOK :

- 1) 'Short Term Earthquake Prediction Using VLF observation : An ICSP Initiative in Indian Sub- continent' by S. K. Chakrabarti, S. Sasmal and **S. Ray**, in 'The Frontier of Earthquake Prediction Studies', Ed. By M. Hayakawa, *Nihon-Senmontosho-Shuppan*, 678-687, 2012, ISBN: 978-4-931507-16-6.
- 2) 'ICSP Detections of Anomalous VLF Radio Wave Signals Prior to Major Earthquakes' by S. K. Chakrabarti, S. Sasmal and **S. Ray**, in "Earthquake prediction Studies – Seismo Electromagnetics", Ed. By M. Hayakawa, *Nihon-Senmontosho-Shuppan*, (TERRAPUB: Tokyo), 2013, 49-55, ISBN: 978-4-88704-163-9.