INDIAN INSTITUTE OF SCIENCE
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INSTITUTE LECTURE

Electromagnetic Threats (Past and Future):
Technological Solution Approaches

Dr. D.V. Giri
Pro-Tech, Alamo, CA,
Adjunct Professor, Dept. of ECE,
University of New Mexico,
Albuquerque, New Mexico, USA

BEL Visiting Chair Professor, IISc

Venue: **Faculty Hall, IISc**
Date: January 19, 2018 (Friday)
Time: 4 to 5 PM

Abstract: Electromagnetic spectrum, like the sun light, is a natural resource that has benefitted mankind, recalling sunlight is also part of the electromagnetic spectrum. In present day society, we are increasing our reliance on widespread technological advancements in computer and electronic systems. The diverse activities of our society such as civil defense, emergency management, air-traffic safety and control, law-enforcement (police and fire), ambulance, communication, hospitals and commerce (both internet and otherwise), have become increasingly dependent on these advancements in technology. Such sophistication comes with a price of vulnerability from a wide variety of threats. There is a diversity of threats, one of which is natural lightning, which happens to be the only threat made by nature. The remainder such as Nuclear Electromagnetic pulse (NEMP), High-Power Microwaves (HPM), and Ultra-wideband (UWB) are all made by mankind. When such environments are created with a purpose of damaging electrical and electronic systems, it is classified as the Intentional Electromagnetic Environment or the IEMI. These threats can affect military assets, as well as civilian infrastructure. The effect or impact of an incident high-power electromagnetic (HPEM) environment on an electronic victim system may be natural, accidental or intentional. In this presentation we will look at some examples of such incidents, including a commercial airline crash, as well as beneficial applications of electromagnetic energy.

Biography: Dr. Giri has over 40 years of work experience in the general field of electromagnetic theory and its applications in NEMP (Nuclear Electromagnetic Pulse), HPM (High-Power Microwaves), Lightning, and UWB (Ultra Wideband). He obtained the B.Sc., Mysore University, India, (1964), B.E., M.E., Indian Institute of Science, (1967) (1969), M.S., Ph.D., Harvard University, (1973) (1975), Certificate, Harvard Introduction to Business Program, (1981). Since 1984, he is a self-employed consultant doing business as Pro-Tech, in Alamo, CA, performing R&D work for U.S. Government and Industry. He is also an Adjunct Professor in the Dept. of ECE, University of New Mexico, Albuquerque, New Mexico, USA. Dr. Giri has taught graduate and undergraduate courses in the Dept. of EECS, University of California, Berkeley campus. Awards and honors include Life Fellow of IEEE, SUMMA Foundation Fellow, 2006 John Kraus Antenna Award., Recipient of Hind Ratan and NRI of the year Awards during Republic Day 2017. More details at his website: www.dvgiri.com.

Prof. Anurag Kumar, Director, will preside

ALL ARE WELCOME
Tea/Coffee at 5 PM