Project: India-based Neutrino Observatory (INO)

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Spin-offs and societal benefits of INO project

Abstract:

- The India-based Neutrino Observatory (INO) Project is a multi-institutional effort aimed at building a world-class underground laboratory at Bodi West Hills near Madurai in Tamil Nadu. The project includes construction of an Iron Calorimeter (ICAL) detector for studying many key open questions of the tiny and elusive particles called neutrinos. ICAL will consists of 50000 tons of magnetized iron plates arranged in stacks with gaps in between where around 29000 Resistive Plate Chambers (RPCs) would be inserted as active detectors. A total of about 3.6 million ultra high speed electronic signals need to be instrumented. In this talk I will briefly describe the indigenous research and development of detectors and instrumentation needed for this experiment. Spin-offs and societal benefits of the project along with career opportunities for the young and motivated students as well as industrial synergies in this prestigious project will be highlighted.

About the Speaker:

- Dr. Satyanarayana did his B. Tech in Electronics and Communication Engineering from J.N.T. University, Hyderabad and Ph.D. in Physics from IIT Bombay. His areas of interest include ‘Detectors and Instrumentation for high energy and nuclear physics experiments’.
- Dr. Satyanarayana is a Fellow of Institution of Electronics and Telecommunication Engineers (IETE) as well as Institute of Engineers (IE). He is a member of the Governing Council of Instrument Society of India as well as a Member of Indian Physics Association. He is a Senior Member of IEEE. He is a member of the Executive Committee, Secretary and Chair of Signal Processing Society of the IEEE Bombay Section. Until recently he also served as the Chair, Technical and Professional Activities of the Section as well as an Executive Committee member, and Vice Chair (Technical Activities) of the IEEE India Council. He won IEEE Bombay Section's Outstanding Volunteer Award for 2014 and IEEE Head Quarter's MGA Achievement Award for 2016.
- Dr. Satyanarayana has published over 220 research papers and proceedings in national and international journals and conferences, besides scores of invited talks. He guided and co-guided a large number of undergraduate, master and doctoral students. He served on many of doctoral and expert committees as well as on college/universities’ academic councils, boards of studies and advisory boards. He is on editorial and refereeing teams of several prestigious science and engineering journals.