



Physical Research Laboratory, Ahmedabad

Colloquium 21_06

- Speaker:** Prof. Bimla Buti
Director, Centre for Science and Society, Buti Foundation, New Delhi
- Title:** "Coherence, Chaos and Turbulence in Plasmas"
- Date and Time:** Wednesday, 03 March 2021, 16:00 – 17:00 hrs
- YouTube Link:** <https://www.youtube.com/watch?v=gLOqwG9VMjA&feature=youtu.be>

Abstract

Plasma science provides one of the cornerstones of our knowledge of the Sun, the stars, the interstellar medium etc. Although it is often not readily apparent, plasma science is relevant to our society in a variety of ways. Plasma science is central to the development of nuclear fusion as a clean, renewable energy source. Coherent laser-plasma radiation sources have a variety of potential applications in medicine and industry. The role of Coherent, Chaotic and Turbulent processes in plasmas will be reviewed in this presentation. A brief description of Chaos and Fractals vis-à-vis Artificial Intelligence will also be presented.

The Speaker

Prof. Bimla Buti is a well-known Plasma Physicist of international repute. She did her Ph.D. with Nobel Laureate Prof. S Chandrasekhar in 1962 from the University of Chicago. Later she worked at Delhi University, GSFC (NASA) and IIT Delhi (1962-70). She was invited by the then Director of PRL, Dr. Vikram Sarabhai, to join as faculty at PRL. At PRL, she held various positions during 1970-1993, including the Deanship. At PRL, Prof. Buti initiated the experimental Plasma Physics programme, which grew and eventually moved out of PRL to form a new institute, now known as the Institute for Plasma Research under the Department of Atomic Energy. She had been the Director of Plasma Physics at the International Centre for Theoretical Physics, Trieste, Italy, during 1985-2003. Besides publishing a large number of research papers, she has edited four books. She also trained a number of students. After her superannuation, she spent four years at JPL (NASA), Pasadena. Prof. Buti founded the Plasma Science Society of India and served as its President (1992-93). She was an Associate Editor of IEEE Transactions on Plasma Science, USA (1977-83) and served as Vice President (1988-91) and President, Commission 49, International Astronomical Union (1991-94). Prof. Buti has received a number of awards, including Vikram Sarabhai Award for Planetary Sciences (1977), INSA Jawaharlal Nehru Birth Centenary Lectureship Award (1993), INSA Vainu Bappu Medal for Astronomy and Astrophysics (1994), Professional Achievement Award of University of Chicago, USA (1996), and US Medal for Fundamental Contributions in the Physics of Nonlinear Waves and Chaos (2010), NASI Prof. Megh Nad Saha Memorial Award (2013), NASI A.C. Banerji Memorial Award (2017) and IPA R.D. Birla Award (2020).

She is a Fellow of TWAS, The World Academy of Sciences; Indian National Science Academy (INSA); National Academy of Sciences India (NASI), and the American Physical Society. Prof. Buti served as INSA Council Member (1991-93). She was the first Woman Physicist to be elected as INSA Fellow (1981) and First Indian Woman Scientist to be elected as TWAS Fellow (1990).

Buti foundation, established by her, has instituted a number of awards through Physical Research Laboratory, Indian Physics Association, National Academy of Sciences (NASI) and awards for young scientists through Plasma Science Society of India as well as GSA Award for Science Communication; a scholarship and a Gold Medal for the best woman Scientist at IIT, Delhi, Madras and Indore.

ALL ARE WELCOME

