



Indian Institute of Technology Kanpur



INSTITUTE LECTURE SERIES

September 29, 2023 (Friday) | 6.00 pm | L - 17

The Mysterious Magnetic Personality of Our Sun

Speaker: Prof. Arnab Rai Choudhuri
Dept. of Physics, IISc Bangalore

About the Speaker



Arnab Rai Choudhuri is a Professor of Physics at the Indian Institute of Science, Bangalore. He received his PhD in 1985 from the University of Chicago under the supervision of Eugene Parker. Dr. Choudhuri has carried on theoretical research on the formation of sunspots and the 11-year sunspot cycle. He was one of the originators of the flux transport dynamo model, the currently favoured theoretical model of the 11-year sunspot cycle.

He is the author of two advanced textbooks, *The Physics of Fluids and Plasmas* (CUP, 1998) and *Astrophysics for Physicists* (CUP, 2010). He is an elected Fellow of all the three science academies of India as well as TWAS. He received the Chandrasekhar Prize for Plasma Physics in 2022 (the second Indian to receive this international prize).

Abstract of the Talk

The Sun is the first astronomical object in which magnetic fields were discovered in 1908 by using the Zeeman effect. Even before this discovery of magnetic fields in sunspots, it was known that there is a 11-year cycle of sunspots, which could be identified as the magnetic cycle of the Sun after this discovery. The magnetic field of the Sun is also behind many other phenomena, such as the violent explosions known as solar flares, the corona much hotter than the solar surface and the solar wind. Only within the last few decades, major developments in plasma physics and magnetohydrodynamics (MHD) have at last provided a broad framework for the theoretical understanding of these phenomena connected with the solar magnetic fields. The speaker will give a general introduction to this field – with some emphasis on the research interests of our group.

A more detailed account of this field can be found in his popular science book:
<http://www.amazon.in/Natures-Third-Cycle-Story-Sunspots/dp/0199674752/>

All are cordially invited to attend

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