

Centre for Strings, Gravitation and Cosmology presents

CHANDRASEKHAR LECTURE

MAGNETIZING THE UNIVERSE

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INTER-UNIVERSITY CENTRE FOR ASTRONOMY AND
ASTROPHYSICS (IUCAA), PUNE

The universe is magnetized. The Earth, Sun, galaxies and galaxy clusters all host coherent magnetic fields and perhaps even the intergalactic medium in large-scale voids. How do these systems get magnetized? The standard picture involves turbulent dynamo amplification of a weak seed magnetic field. The seed could arise in a cosmic battery and cosmic dynamos then convert kinetic energy of motions to magnetic energy. Another intriguing possibility is magnetogenesis in the early universe, for example during the inflationary era. We discuss the ideas behind both these paradigms for magnetic field origins highlighting current challenges and future prospects.

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Kandaswamy Subramanian did graduate work at the Tata Institute (Mumbai), was a postdoc at Cambridge and Sussex in the UK before becoming a faculty member at NCRA-TIFR and then at IUCAA, Pune. Currently he is a Distinguished Professor and Dean, Visitor Academic Programmes at IUCAA. His research encompasses a wide spectrum of astrophysics, including cosmic magnetism. He has received the B. M. Birla Science Prize in Physics, is a Fellow of the Indian Academy of Sciences and the Indian National Science Academy.



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