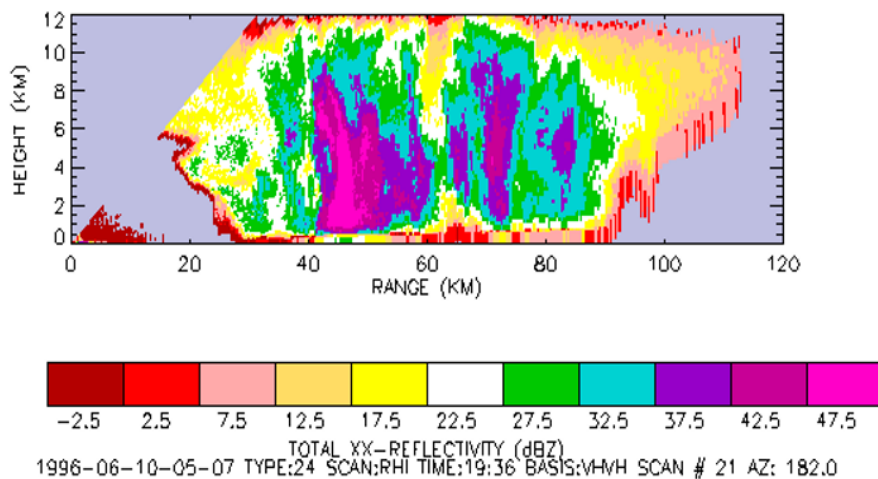


PROF. DR. RER. NAT. MADHU CHANDRA



PRESENT AND FUTURE OF WEATHER RADAR OBSERVATIONS AND MONITORING FOR ENVIRONMENTAL MANAGEMENT



An example of a weather radar signature of a 'killer' rainfall rain event recorded with a modern Polarimetric-Doppler. Such information can potentially save lives.

Radars, particularly weather radars, both ground-based and space-borne, provide an effective tool for continually monitoring and observing the weather across the globe. Weather radar observations provide wide area coverage, particularly in areas where in situ measurements are either impossible or difficult. The advent of modern multi-parameter polarimetric and Doppler weather radars has given the weather services, the environmental protection agencies, Hydrologists and Disaster Management authorities access to hitherto unparalleled information on global weather. In particular, weather radars are instruments of choice in the maintenance of the global digital twin for weather. In this presentation, the present and future development of the basic Science, Engineering and practical application of weather radars will be presented in the context of environmental protection and disaster management.

CV

Prof. Chandra studied Mathematics and Physics at the universities of Cambridge (Part 2 Tripos), London and Salford, obtaining B.Sc. and Ph.D. degrees from the Universities of London and Salford, respectively, in 1973-4, 1978 and 1981.

After serving in the academic staff at the University of Bradford (UK) until 1984, Prof. Chandra was at DLR (German Aerospace Research Centre) for 18 years, where he led the group on radar physics. From 2002 until his retirement on 30th September, 2021, Prof. Chandra held the chair for Microwave Engineering and Electromagnetic Theory at the Chemnitz University of Technology, Germany. During his tenure as the Professor and head of the Department, Prof. Chandra also served as the Dean of the Faculty for Electrical Engineering and Information Technology. Currently he is serving the University of Chemnitz as Professor emeritus and leading several research projects on radars, particularly weather radars.

Prof. Chandra's areas of research interest and expertise include: Multi-parameter radars, wave propagation and scattering, and electromagnetic remote sensing. Prof. Chandra is the recipient of the IEE best paper award and the URSI young scientist award for his contributions in the field of wave propagation in polarimetric-Doppler radar applications. He has also served as: the URSI Commission-F chair, both at the national and international level. Prof. Chandra is an URSI Fellow and has served as the Chairman of the council of all German University Faculties of Electrical Engineering and Information Technology.

To date, he has published more than 150 papers in refereed conference proceedings and research journals in the field of Multi-Parameter Radar Remote Sensing and has more than 45 years of professional experience in higher education and in research on using multi-parameter radar remote sensing. Prof. Chandra grew up in England, is married, and has two daughters.