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INSTITUTE LECTURE

From Raindrops to Floods: Advances, Challenges and Opportunities in Rainfall Measurement using Dual-polarization Radar

Date	August 16, 2018
Time	4.00 pm
Venue	Faculty Hall

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Abstract

Accurate measurement of rainfall is one of the most important and challenging problem that has been pursued for thousands of years by various civilizations. Most of the modern societies spend a lot of resources to monitor rainfall and its variability, because rainfall is the major source of freshwater. The potential for climate change and rapid urbanization has made this even more critical.

Remote sensing radars have been utilized to provide a good measure of the spatial variability of rainfall patterns, nevertheless getting accurate quantitative estimate has always been a challenge. More recently major advance has been made in the area of rainfall measurement using dual-polarization radar technology.

The dual-polarization radar systems directly resolve the microphysical variabilities in rainfall, contributing to the success of rainfall measurement. This lecture will present the journey from observing raindrop shapes to regional and global measurement of rainfall to monitor the global water cycle, with a brief introduction to the NASA Global Precipitation Mission as well as the emerging urban flood monitoring radar networks that is becoming a key part of smart city infrastructure in major metropolitan regions.

Bio

Prof V. Chandrasekar currently serves as the University Distinguished professor at Colorado State University, with Honorary Distinguished Chair professor Titles in many universities, including University of Helsinki, IISc Bangalore and IIT Kharagpur. He obtained his B Tech from IIT Kharagur and PhD from Colorado State University. Dr Chandrasekar has extensive experience in Radar System Design, Radar Network Development, DSP Design as well as RF Communication Systems and has made pioneering contributions in the area of "Polarimetric Radar Observations of the Atmosphere". He has co-authored two textbooks, namely, Polarimetric and Doppler Weather Radar (by Cambridge University Press) and Probability and Random Processes (by McGraw Hill), and five general purpose books. He is elected Fellow of both Science and Engineering societies including IEEE, American Meteorological Society, Union of Radio Science (URSI), and NOAA –CIRA. He also has received numerous awards including IEEE education award, NASA Technical Achievement award, University Outstanding Researcher award and Outstanding Advisor Award. He was knighted by the Government of Finland for discoveries leading to remote monitoring of the fragile arctic systems.

ALL ARE WELCOME | Tea/Coffee at 5.00 pm