



# Avviso di Seminario

Il Dipartimento di Ingegneria Elettrica e delle Tecnologie dell'Informazione (DIETI) dell'Università degli Studi di Napoli Federico II, l'IEEE GRSS South Italy Chapter e IEEE Young Professionals invitano gli interessati a partecipare al seminario tenuto dal

**Prof. Avik Bhattacharya**

Indian Institute of Technology Bombay

**Venerdì 20 Marzo 2026, ore 12:30**

**Exploring Scattering Information from Polarimetric SAR Data**

*Dipartimento di Ingegneria Elettrica e delle Tecnologie dell'Informazione (DIETI)  
Aula CL-T-6, Edificio 1 - Via Claudio 21, Napoli*

## Abstract

*This presentation explores the extraction and interpretation of scattering information from full polarimetric Synthetic Aperture Radar (PolSAR) data. Three fundamental descriptors are introduced: a polarimetric scattering-type parameter derived from the scattering matrix, a novel scattering purity measure that addresses limitations of conventional metrics, and a scattering complexity parameter that captures interactions among multiple scattering mechanisms. The proposed framework provides a physically consistent and basis-invariant representation of scattering behavior. Also, some recently proposed descriptors are presented, and their effectiveness is demonstrated through applications in crop monitoring, vegetation characterization, and urban mapping using multi-frequency SAR datasets. The results highlight the potential of these descriptors for improved geophysical interpretation and enhanced remote sensing applications.*



**Avik Bhattacharya** received the integrated M.Sc. degree in Mathematics from the Indian Institute of Technology, Kharagpur, India, in 2000 and the Ph.D. degree in remote sensing image processing and analysis from Télécom ParisTech, Paris, France, and the Ariana Research Group, Institut National de Recherche en Informatique et en Automatique (INRIA), Sophia Antipolis, Nice, France, in 2007.

He is a Professor at the Centre of Studies in Resources Engineering, Indian Institute of Technology Bombay (CSRE, IITB), Mumbai, India. Before joining IITB, he was a Canadian Government Research Fellow at the Canadian Centre for Remote Sensing (CCRS) in Ottawa, ON, Canada. He received the Natural Sciences and Engineering Research Council of Canada visiting scientist fellowship at the Canadian national laboratories from 2008 to 2011. His current research interests include SAR polarimetry, physics-informed AI for SAR data analysis, and applications of Radar Remote Sensing in

Agriculture, Cryosphere, Urban, and Planetary studies.

Dr. Bhattacharya was the Editor-in-Chief of the IEEE Geoscience and Remote Sensing Letters (GRSL) from 2019 to 2023. He is an Associate Editor of the Journal of Remote Sensing, a Science Partner Journal (SPJ) and the IEEE Open Journal of the Computer Society. He has been the Guest Editor for several special issues in IEEE GRSS journals. He is the Founding Chairperson of the IEEE Geoscience and Remote Sensing Society (GRSS) Chapter of the Bombay Section. In 2024, he was awarded the IEEE GRSS Regional Leader Award. He is an elected member of the IEEE GRSS Administrative Committee (2024–2026) and is the Vice President of Professional Activities. He leads the Microwave Remote Sensing Lab ([www.mrslab.in](http://www.mrslab.in)) at CSRE, IITB.

Per informazioni

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