



中国矿业大学环境与测绘学院

School of Environment and Spatial Informatics, CUMT

学术讲座

报告题目: 超光谱成像卫星 PRISMA 及意大利锡耶纳大学介绍

Title : Hyperspectral Imaging Satellite PRISMA and Introduction to the University of Siena

特约报告人: Andrea Garzelli, Department of Information Engineering and Mathematical Sciences, University of Siena

地点: 环测学院 A512

时间: 9月18日(周三)下午14:30-16:00



报告内容:

摘要: PRISMA (PRecursores IperSpettrale della Missione Applicativa) 是意大利航天局 (ASI) 开发的超光谱成像卫星, 于 2019 年成功发射。它代表了在遥感技术领域的一次重要突破, 旨在提供高分辨率的光谱数据, 以满足大气监测、农业管理和资源勘查等多领域的需求。超光谱成像技术能够在从可见光到近红外的广泛波段内捕捉地物的详细光谱信息, 使得地物的分类和特征提取更加精确, 并在二氧化碳和甲烷等碳监测方面显示出相当大的潜力, 极大地提升了对复杂环境的分析能力。本次报告中报告人将向我们介绍 PRISMA 超光谱成像卫星数据处理, 图像融合及其定量反演算法。另外还将介绍所属的学校—意大利锡耶纳大学, 共同探讨如何深化加强与中国矿业大学环境与测绘学院的合作关系。

Abstract: PRISMA (PRecursores IperSpettrale della Missione Applicativa) is a hyperspectral imaging satellite developed by the Italian Space Agency (ASI) and was successfully launched in 2019. It represents a significant breakthrough in remote sensing technology, designed to provide high-resolution spectral data to meet the needs of atmospheric monitoring, agricultural management, and resource exploration. Hyperspectral imaging technology captures detailed spectral information of objects across a wide range of wavelengths from visible light to near-infrared, enabling more precise classification and feature extraction of objects. It has demonstrated considerable potential in carbon monitoring, such as carbon dioxide and methane, greatly enhancing the ability to analyze complex environments. The presenter will introduce PRISMA's hyperspectral imaging data processing, image fusion, and associated algorithms. Additionally, the presenter will discuss their affiliated institution, the University of Siena in Italy, and explore the deepening and strengthening of collaborative relationships with the School of Environmental and Surveying Engineering at China University of Mining and Technology.

报告人简介:

安德烈亚·加尔泽利是锡耶纳大学信息工程与数学系的正教授。他在佛罗伦萨大学获得了博士学位。他的主要研究领域包括使用高光谱卫星和合成孔径雷达 (SAR) 传感器的遥感

图像处理和图像融合。他曾在 2016 年至 2021 年担任锡耶纳大学质量委员会(PQA)主席，并且在 2019 年、2020 年、2021 年、2022 年以及整个职业生涯中被斯坦福大学认定为全球前 2% 的科学家之一。他是现任的 IEEE TGRS 期刊副编辑 (Associate Editor) 目前，他的团队正在进行的研究包括：1) 提高卫星数据的空间分辨率，融合高光谱和多光谱数据，如 PRISMA、Sentinel-2 等卫星数据，以及全色锐化；2) 通过光学和 SAR 数据的融合评估环境中的损害和干扰；3) 遥感卫星数据的质量和准确性评价。

Andrea Garzelli is a full professor at the Department of Information Engineering and Mathematics at the University of Siena. He earned his Ph.D. from the University of Florence. His main research areas include remote sensing image processing and image fusion using hyperspectral satellites and SAR sensors. He has been president of the Quality Assurance Committee (PQA) of the University of Siena from 2016 to 2021 and has been recognized as one of the top 2% scientists globally by Stanford University in 2019, 2020, 2021, 2022, and throughout his career. He is current IEEE-TGRS Associate Editor. Currently, his team is working on research including: 1) enhancing spatial resolution of satellite data, fusion of hyperspectral and multispectral data such as Prisma, and pansharpening; 2) evaluating damage and interference in the environment through the fusion of optical and SAR data; and 3) assessing the quality and accuracy of remote sensing satellite data.

邀请人：秦凯

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