MICRO-SCHOOL

NITheCS
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Unlocking Earth Observation Data – Access and Analysis with Xarray Ecosystem Tools

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Fri, 28 March 2025 | 12h00-12h30 SAST

Attend online

ABSTRACT

Earth Observation (EO) data is now more accessible than ever, offering unprecedented opportunities for environmental monitoring and research. Effectively utilizing this data requires proficient tools for access and analysis. In this micro-school, participants will explore methods to retrieve openly available EO datasets and construct Earth Observation Data Cubes using Python libraries such as cubo and odc-stac. These tools facilitate the direct loading of EO data into Xarray objects, streamlining the process of data manipulation and analysis. Additionally, attendees will be introduced to spyndex, a Python package that simplifies the computation of various spectral indices relevant to EO applications. Through concise, practical examples, participants will gain insights into leveraging these tools to enhance their geospatial data analysis workflows. This session aims to provide participants with foundational knowledge and practical techniques to effectively access and analyze complex Earth Observation datasets using the Xarray ecosystem and its associated tools.

BIOGRAPHY

Marco is a PhD student in the Department of Earth Observation at Friedrich Schiller University Jena, Germany, under the supervision of Prof Christiane Schmullius. He is also an affiliate research student at the Mathematical Biosciences Lab (BioMath) at Stellenbosch University, where he is co-supervised by Dr Sandra MacFadyen.

His research focuses on modelling vegetation structure in savanna ecosystems using Earth Observation data, applying data engineering, statistical modelling, and machine learning techniques. He holds an MSc in Geoinformatics from Friedrich Schiller University Jena.

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