MICRO-SCHOOL

NITheCS
National Institute for Theoretical and Computational Sciences

Introduction to Xarray: Empowering Multidimensional Data Analysis

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Fri, 14 March 2025 | 12h00-12h30 SAST

Attend online

ABSTRACT

Xarray is a powerful open-source Python library that extends NumPy and Pandas to handle labeled multi-dimensional arrays, particularly suited for working with complex scientific data such as climate models, satellite imagery, and other large-scale scientific datasets. It offers powerful tools for data manipulation, analysis, and visualization, including support for labeled indexing, grouping operations, and seamless integration with other scientific Python libraries. This micro-school will introduce Xarray's core data structures and demonstrate their capabilities in managing complex data with labeled dimensions and coordinates. Attendees will learn how to perform operations such as data selection, aggregation, and visualization, enabling more intuitive and effective analysis of multidimensional data. The goal is to equip participants with the skills to integrate Xarray into their data workflows, enhancing their ability to process and analyze complex datasets.

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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