NITheCS
National Institute for Theoretical and Computational Sciences

NITheCS Colloquium
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Prof Mattia Vaccari | University of the Western Cape

“The Ilifu Cloud Computing Facility & X-Informatics Data Intensive Research”

ABSTRACT

Over the past decade the global science enterprise has been transformed by the data generating capabilities of our instruments. Distributed science collaborations creating datasets too large to manage for individual researchers are becoming the norm, and in response X-Informatics, or the application of data science techniques to different science fields, has evolved into a new and exciting field of applied computer science. In this new big data era, institutions and national communities that have the capacity to design and implement the solutions to effectively extract knowledge from data will play a lead role in science. Those that do not, will not. The Ilifu project was set up to address this challenge in Astroinformatics and Bioinformatics. Ilifu is building cross-disciplinary teams to undertake research and development in technologies and big data science to build capacity for South African researchers to be globally competitive in the era of big data. In this presentation I will talk about Ilifu, its partnership model, our goals and research programs, with a particular focus on multi-wavelength galaxy evolution studies, and outline a vision for a federated South African Data Intensive Research Cloud that empowers researchers to work with and collaborate on big data science projects.

BIOGRAPHY

Mattia Vaccari studied at the University of Padova where he completed an MSc in Physics and a PhD in Space Science & Technology. He has since been a Research Fellow at Imperial College London, the University of Padova and the University of the Western Cape. Since April 2019 he is eResearch Director and Astroinformatics Research Professor at the University of the Western Cape, where he serves as the Ilifu Cloud Computing Facility Director and carries out research in Multi-Wavelength galaxy evolution with the Inter-University Institute for Data Intensive Astronomy (IDIA) and the Department of Physics & Astronomy. In his research, he uses ground-based as well as space-based telescopes to observe distant galaxies at all wavelengths of the electromagnetic spectrum and thus study their formation and evolution over cosmic time. He leads the HELP-IDIA Panchromatic Project (HIPPO), whose aim is to create a cloud-based environment where astronomers can exploit current and upcoming radio observations in the context of multi-wavelength data in a collaborative manner.

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