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The Ilifu Cloud Computing Facility and the HIPPO Project

The coming of age of multi-wavelength astrophysics over the past decade has allowed us to probe deep and wide into the distant universe at all wavelengths thanks to the combination of ground-based and space-based instrumentation. This giant leap in observational capabilities has provided much insight into how different wavelengths can be used to reliably trace star formation rates and thus place stronger constraints on the cosmic star formation history and on computer simulations trying to reproduce it. However, optimally merging different datasets remains a formidable challenge due to the size and complexity of upcoming surveys. This has recently encouraged the adoption of machine learning techniques.

The Ilifu cloud computing facility is a data intensive research facility developed by the Inter-University Institute for Data Intensive Astronomy (IDIA) and whose main aim is to facilitate the reduction and the scientific exploitation of MeerKAT data. Ilifu not only supports the data reduction of most MeerKAT Large Survey Projects and Open Time Projects but also provides a platform to collaboratively develop a variety of scientific analysis and visualization tools. Building on the Ilifu cloud, the HELP-IDIA Panchromatic Project (HIPPO) is developing an environment for the effective multi-wavelength characterization of radio sources. In my talk I will describe the rationale for Ilifu and its development to date and detail some of the projects and services it currently supports. I will then describe the aims of HIPPO and demonstrate some of the tools it created to enable multi-wavelength studies of the cosmic star formation history with radio surveys.

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CHPC User

Yes

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