



Physics Colloquium

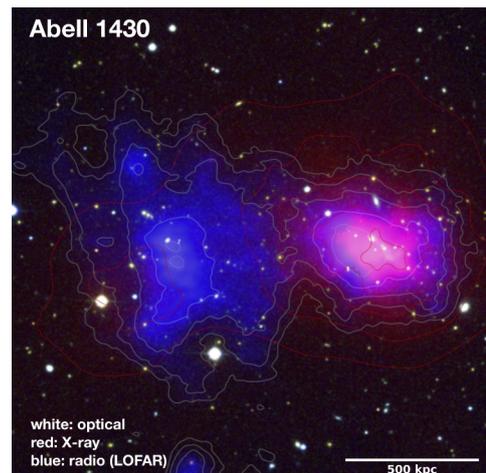
Tuesday, 16 Apr 2024 at 16:30

Prof. Dr. Matthias Hoeft

Thüringer Landessternwarte Tautenburg (TLS) / Universität Leipzig

Exploring cosmic magnetism with a new generation of radio telescopes

Radio astronomy is undergoing a dramatic change: new large international telescopes are coming online. I will briefly introduce the largest facilities: the Low Frequency Array (LOFAR), MeerKAT and the Square Kilometre Array. The new interferometers allow us to probe the sky at radio wavelengths with unprecedented resolution and sensitivity. LOFAR, in which the TLS is involved, has revolutionised observations at the longest wavelengths observable with ground-based telescopes. The new instruments allow us to study magnetic fields and relativistic electrons at the largest cosmological scales, *i.e.* in galaxy clusters and cosmic filaments. The magnetisation, characterised by its Faraday spectrum, is an excellent indicator of how the intergalactic medium has evolved. However, the structure and strength of the magnetic fields are still poorly constrained. The new telescopes allow us to get a much clearer picture of cosmic magnetism. As an example, I will present our ongoing studies of the magnetic fields in the galaxy cluster MACS J0717+37.



Venue: Universität Leipzig, Faculty of Physics and Earth Sciences
04103 Leipzig, Linnéstraße 5, Small Lecture Hall

After the lecture, everyone is invited to continue discussions in the Aula with Coffee and Cookies.

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