Visual Computing Colloquium
January 18th, 2018, 2pm
Visual Computing Lab C061

Twinkle, twinkle, little star, how I wonder what you are! - Big, Bigger, Huge Data Challenges in Astronomy

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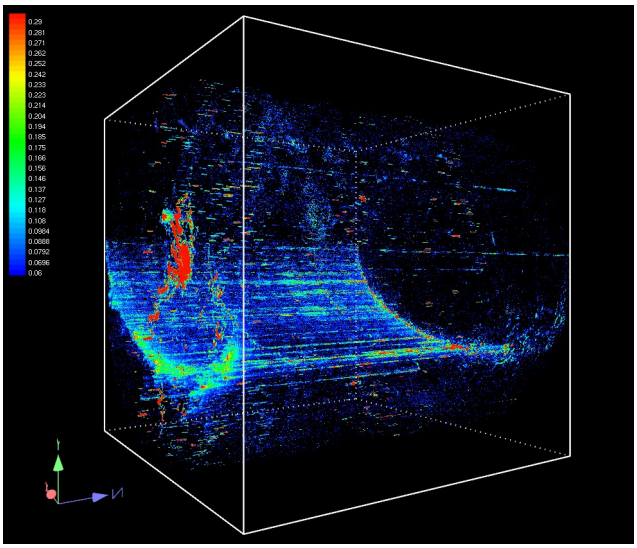
Data volumes of the upcoming Square Kilometre Array



Neutral Hydrogen observations of the whole southern sky made by Russell Jurek (ATNF) from the existing set of 387 original southern HIPASS cubes. 3D Visualisation by Amr Hassan (Swinburne University of Technology)

Abstract
Astronomy is fundamentally a discovery science that provides essential clues to our understanding of the inner workings of the Universe. The new generation of powerful observatories will be the biggest civil data engines ever.

Accumulating data in the zettabyte (1^21 byte) regime will open up the discovery space for new physics and the ability to access, manipulate, analyse, and visualise even small parts of such datasets is a major challenge.

I will provide an overview of big data in astronomy, the data challenges, the upcoming observatories like the Square Kilometre Array (SKA), and an opportunity of a German data centre.

Dr. Hans-Rainer Klöckner is involved in the SKA efforts in Germany, he is the secretary of the GLOWSKA working group, project scientist of the SKA-MT-MPIfR Prototype Disk, and has lead the European science simulations (SKADS) for the SKA.

He has studied physics and astronomy at the University of Bonn 1998, received his PhD 2004 at the Kapteyn-Institut at the University of Groningen (The Netherlands).

After a Postdoc at ASTRON in the Netherlands, he worked in observational cosmology at the University of Oxford for 7 years.

Since 2010 he is working at the Max Planck Institute for Radio Astronomy in Bonn.

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