
Open Space for ICT

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V3EO - Die Dritte Dimension der Erdbeobachtung



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V3EO – Visualization of 3D Earth Observation Products

■ Problems to solve:

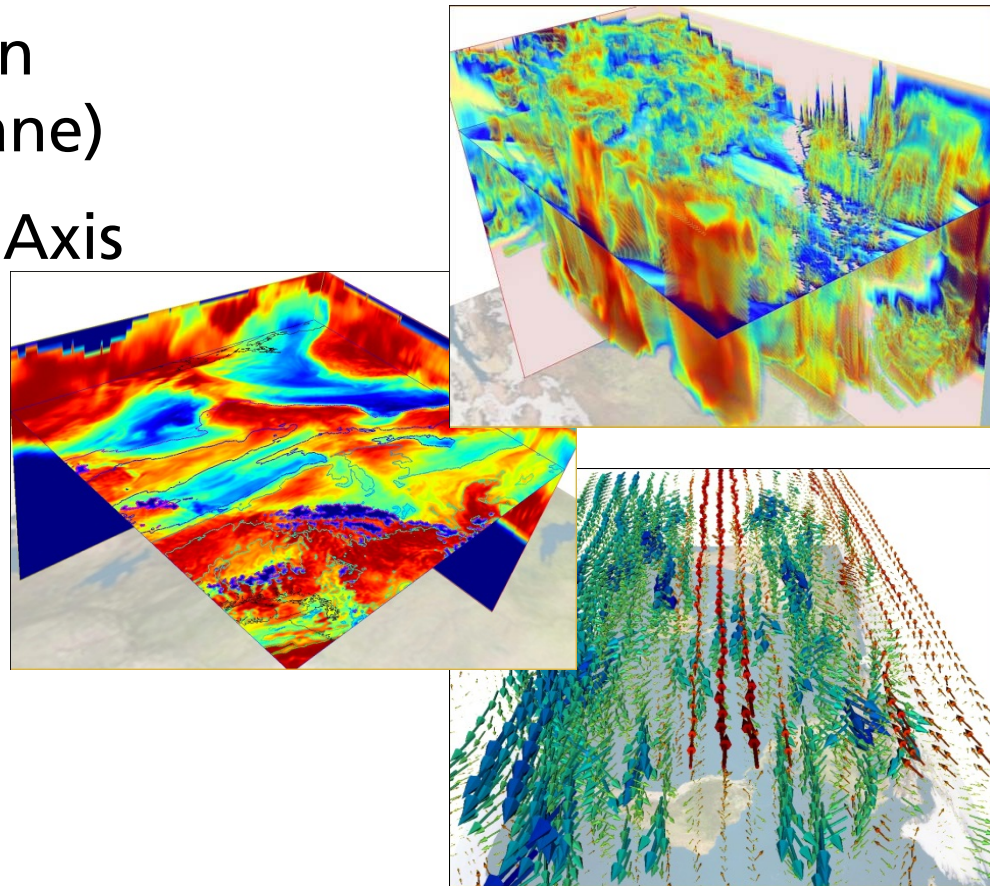
- Extraction/preprocessing of EO big data; e.g.:
 - Decades of climate change data
 - Volumetric weather radar data (real-time)
 - Forecast meteo data
- Efficient streaming of volume data
- Interactive visualization (within web browser)

■ Goal:

- Development of an extraction and preprocessing pipeline for volumetric satellite data

Volume Renderer

- Contextual information
(Terrain on ground plane)
- Clear identification of Axis
(Ticks, labels, units)
- Data picking
(Data navigation)
- Interaction:
 - Slicing
 - Threshold
 - Rotation, panning

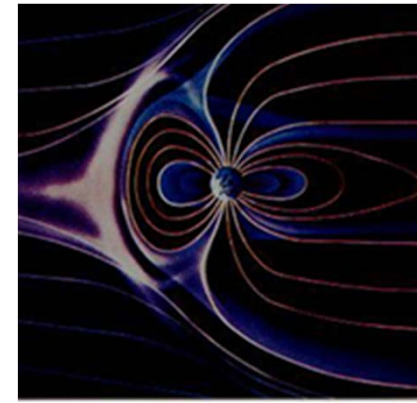
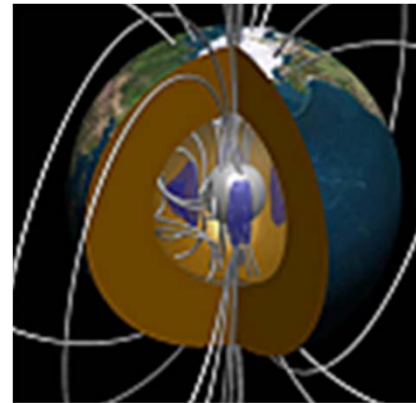
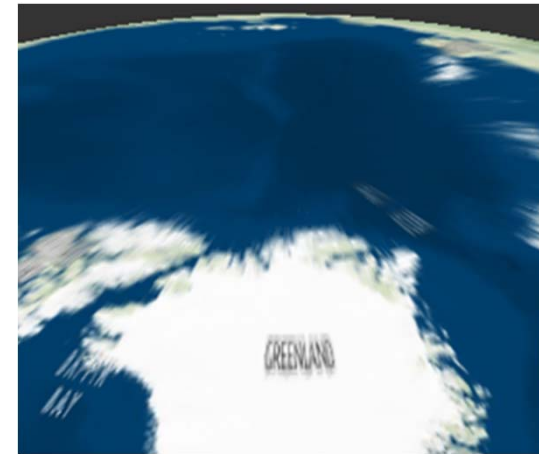


Voxel Cache

- Creation of access-optimized structure based on original EO Data
- Allow fast random access
 - Based on position; i.e. bounding box
 - Based on time interval
- Provide initial low resolution data and streaming of additional higher resolution data
- Additional time dimension to navigate temporal evolution

Vector Globe

- Vector data visualization
- Prevent issues related with visualization of raster data (re-projection)
- Allow visualization of 3D data (e.g. magnetic field lines)



Thanks for your attention!

