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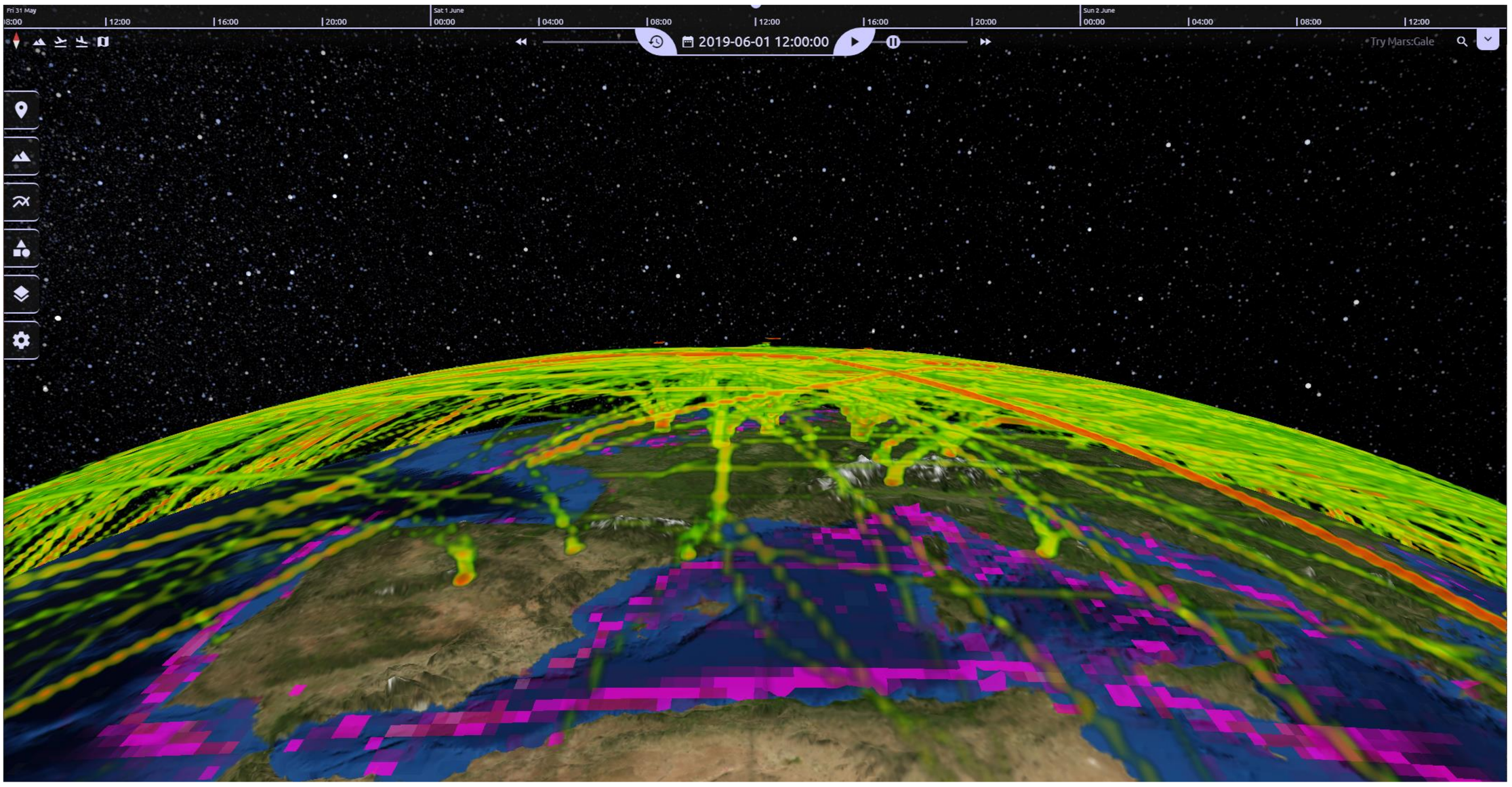
CosmoScout VR: Visual Exploration of Emission Data

Providing an interactive toolset for visual exploration and analysis of emission data in CosmoScout VR using visual programming and OGC web services for the DLR project ELK.



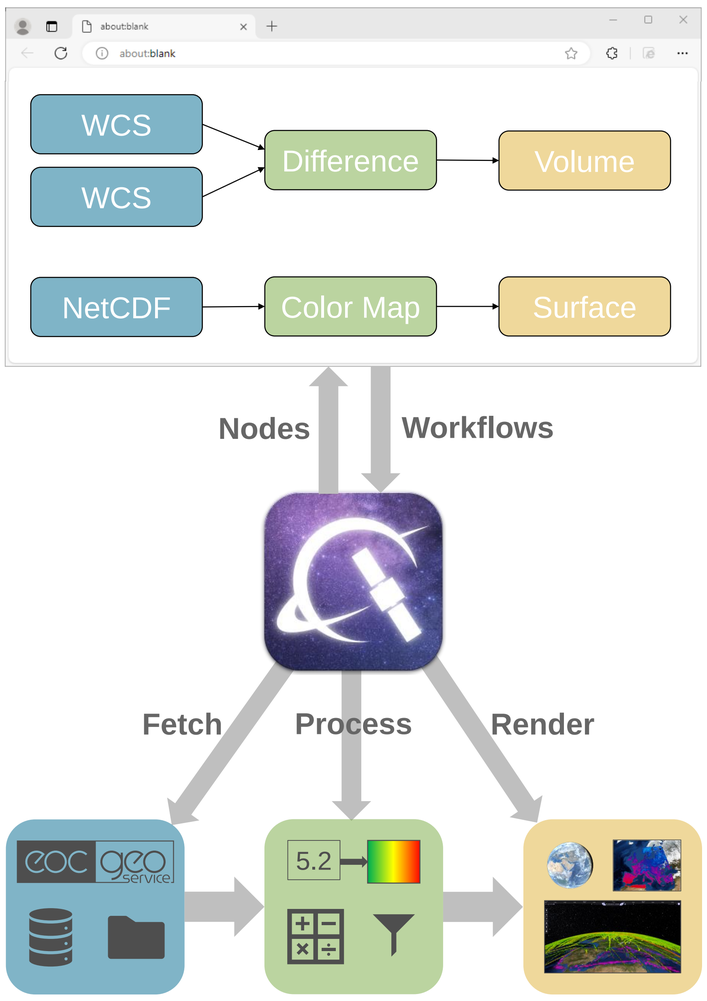
A screenshot of CosmoScout VR. Several datasets are visualized here at the same time. The globe is rendered using the blue marble image data. Projected onto the surface of the oceans are the NOx emissions of ship traffic using a violet color map. Lastly BC emissions of air traffic are visualized in 3D using volume rendering with a heat color map.

Summary

Emissions are an important topic in todays world, where we fight climate change, pollution and health risks. Visual analysis can help combat emission-based problems by

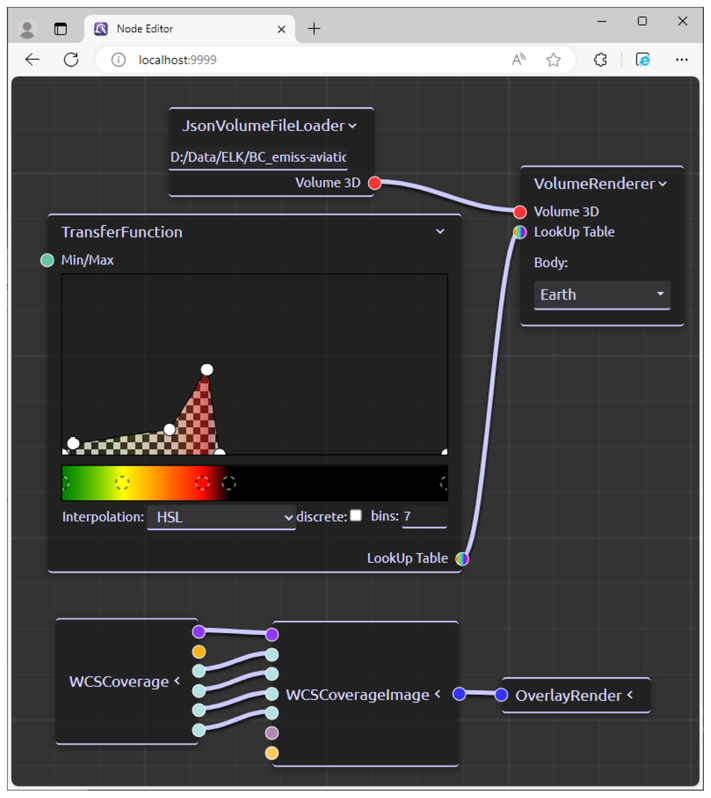
- Identifying high emission areas
- Monitoring traffic congestion
- Identifying carbon sinks
- Monitoring air quality
- Tracking public transport routes
- Identifying cycling & walking paths
- Mapping renewable energy potential
- Analyzing land use changes.

CosmoScout VR can support in completing these tasks by providing a highly flexible visual programming framework to load, process and visualize data from multiple sources using open standards, like OGC web services.



CosmoScout VR's visual analytics pipeline. CosmoScout provides the available nodes to the web-based node editor, which the user takes to create workflows. CosmoScout VR then executes the task specified by the workflows.

Web-based node editor to create visualization pipelines using visual programming and OGC web services. The visualization at the top of this poster was created using this pipeline. This workflow loads, processes and visualizes two data sets.



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