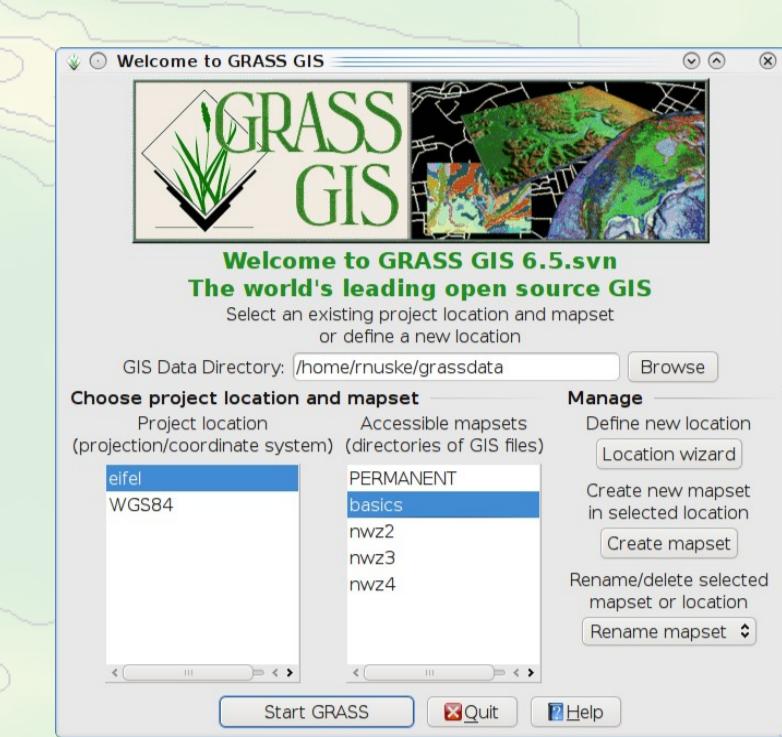


GRASS GIS

The World Leading Free Software GIS

What is GRASS?

GRASS (Geographic Resources Analysis Support System) is the most comprehensive open source GIS. GRASS is a hybrid, modular geoinformation system with raster-and vector functions. GRASS is available under the GNU General Public License and is a freely available software. The system provides raster and vector data, topological functions, 3D Raster and Voxel processing, image processing, spatial modelling, visualization capabilities, map production and the import and export of various GIS data formats. As a portable software it runs on the common operating systems: (**Linux**, **Mac OS X**, **Windows**) with a graphical user interface, and optionally a command line interface.



3D-Data

GRASS is able to process both three-dimensional vector and raster data. For instance, this can be used for modeling ground water as well as for precipitation modeling.

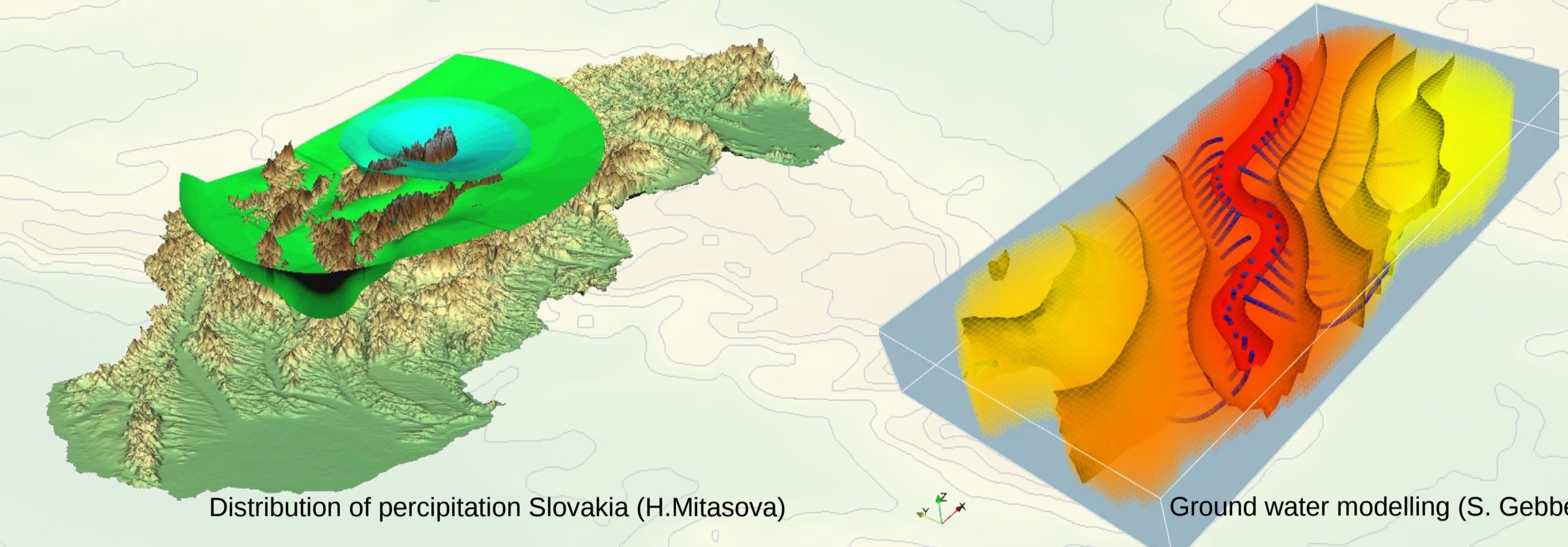


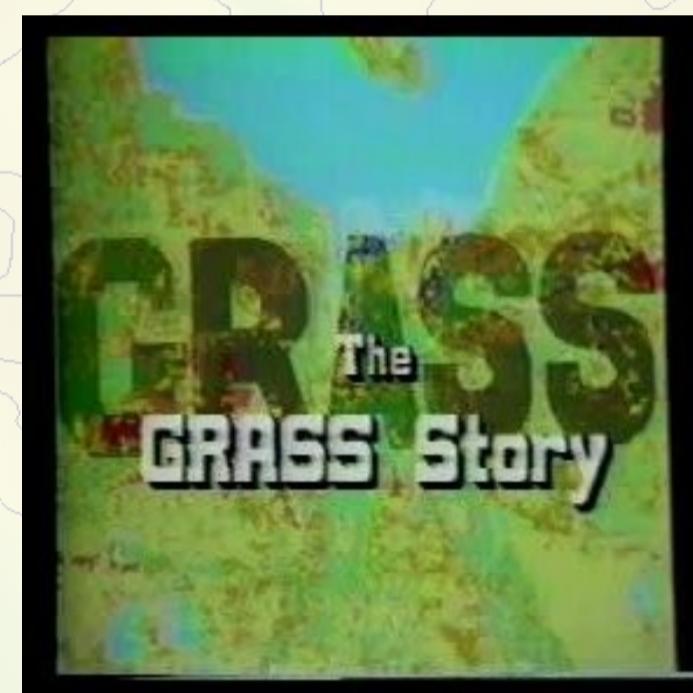
Photo-realistic landscapes can be generated from digital terrain models and satellite imagery in conjunction with Pov-Ray.



History of GRASS GIS

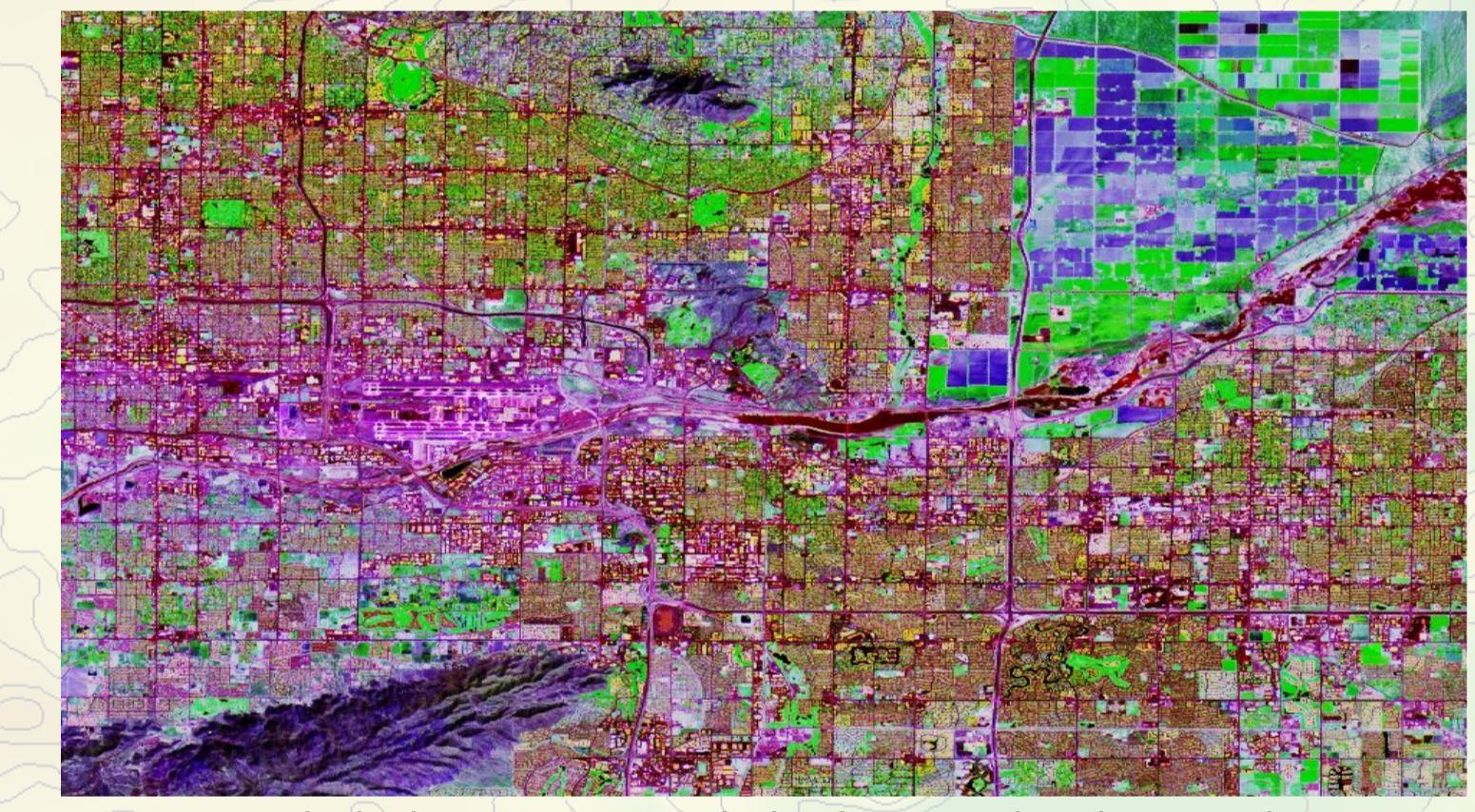
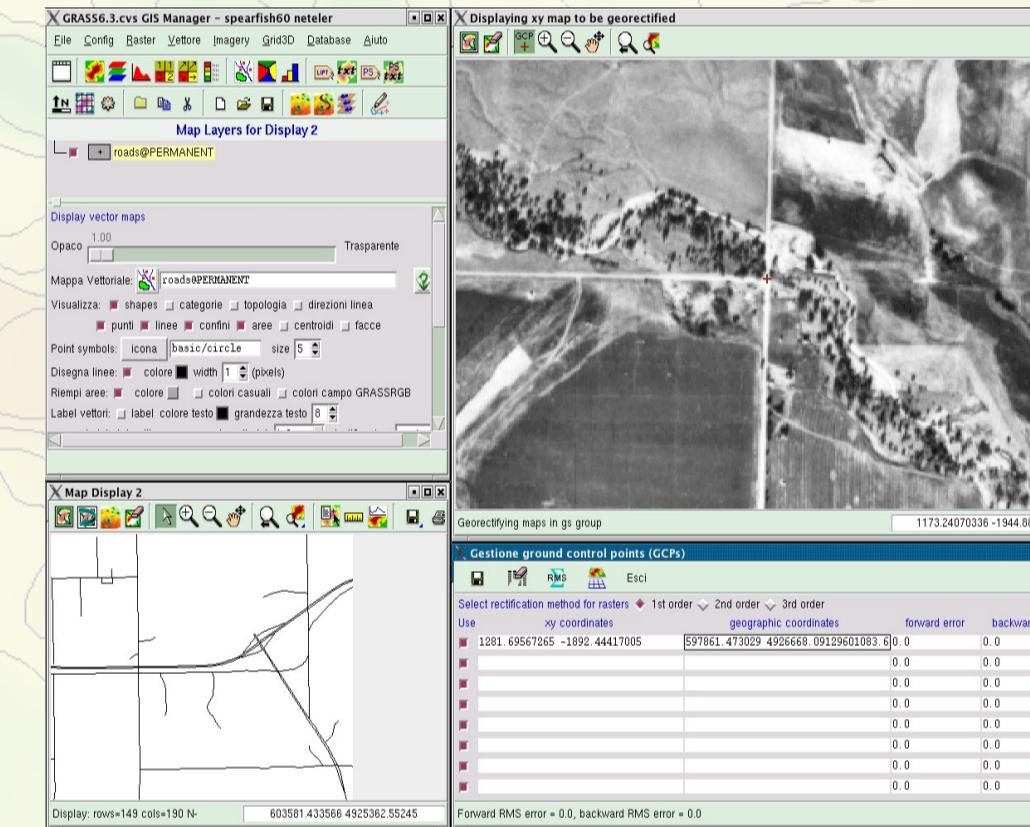
GRASS was first developed in 1982 by the U.S. Army Corps of Engineers. The fact that the development has been funded by tax money, led to the free utility of the program.

GRASS 4.0 was the first version released on the Internet in the 1990s. In 1997 the GRASS Development Team was founded at Baylor University (Texas), and version 4.2 was released in November of that year. Since 1999, GRASS is released under the GPL. The development is now coordinated from Europe (now Fondazione E. Mach, Italy; formerly by the Department of Geography, University of Hanover, Germany). Since February 2008 GRASS is an official OSGeo project. Currently GRASS is nearing release of version 6.4.



Remote Sensing

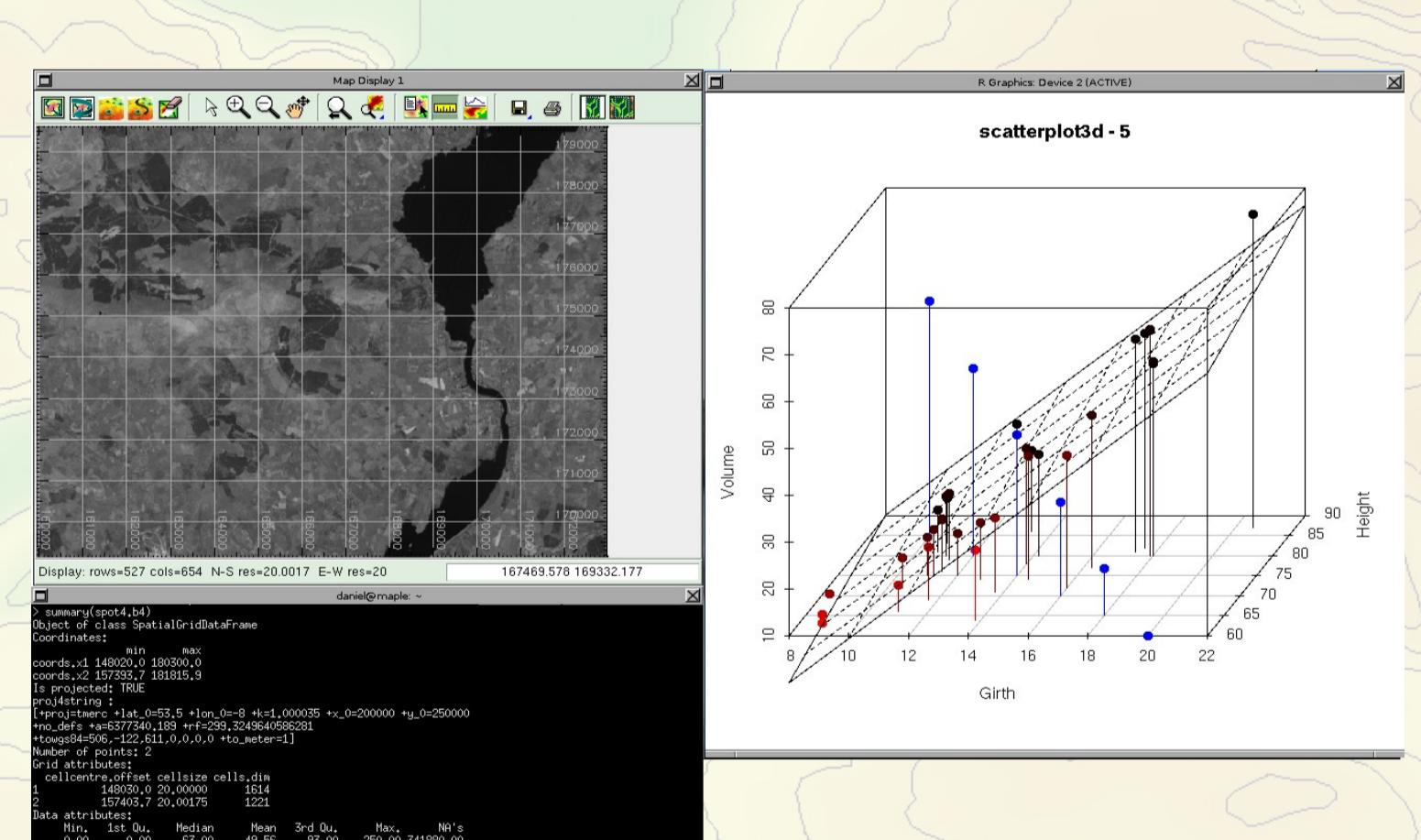
GRASS has a plethora of methods for processing remotely sensed data. In addition, to radiometric and geometric corrections, GRASS has extensive image classification, image enhancement, segmentation, change detection and Principal Component Analysis capabilities.



GRASS and R

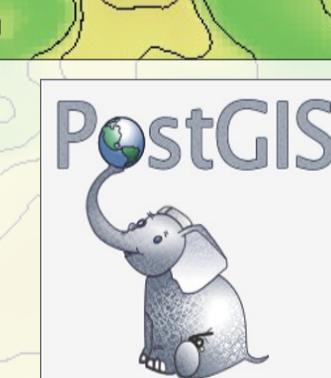
GRASS seamlessly links with R using the spgrass6 interface, which facilitates statistical analysis of geographical data in R, the 'lingua franca' of statisticians.

Besides traditional methods such as cluster analysis and kriging it is also possible to analyse point patterns, habitats and telemetry data with R. Simple statistical summaries and other regionalizations such as kNN method can be carried out within R. It is equally possible to harness the visualisation capabilities of R.



GRASS and Database Management Systems

To manage your attribute data in GRASS you can choose from the most popular database management systems. At present, drivers for PostgreSQL, MySQL available, Sqlite, and the DBF format are supported. In contrast to the full relational database management systems, the DBF driver has only limited capabilities.



Further Information:

Homepage:

<http://grass.osgeo.org/>

Wiki:

<http://grass.osgeo.org/wiki>

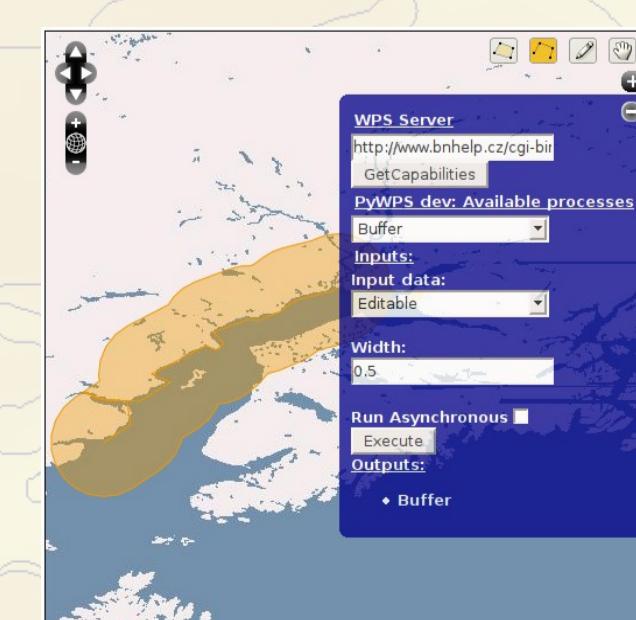
Download:

<http://grass.osgeo.org/download>

International Mailing List:

<http://grass.osgeo.org/community/support.php>

Web Processing Services & Web GIS



For some time there are different ways to use GRASS as a Web Processing Service. For examples PyWPS, WPS Server and the PHP project called ZOO. In GRASS 7 an XML document containing the WPS process description issued automatically if the module is called with the parameter "--wps-process-description". In addition, GRASS data can be easily integrated into UMN Mapserver applications.