

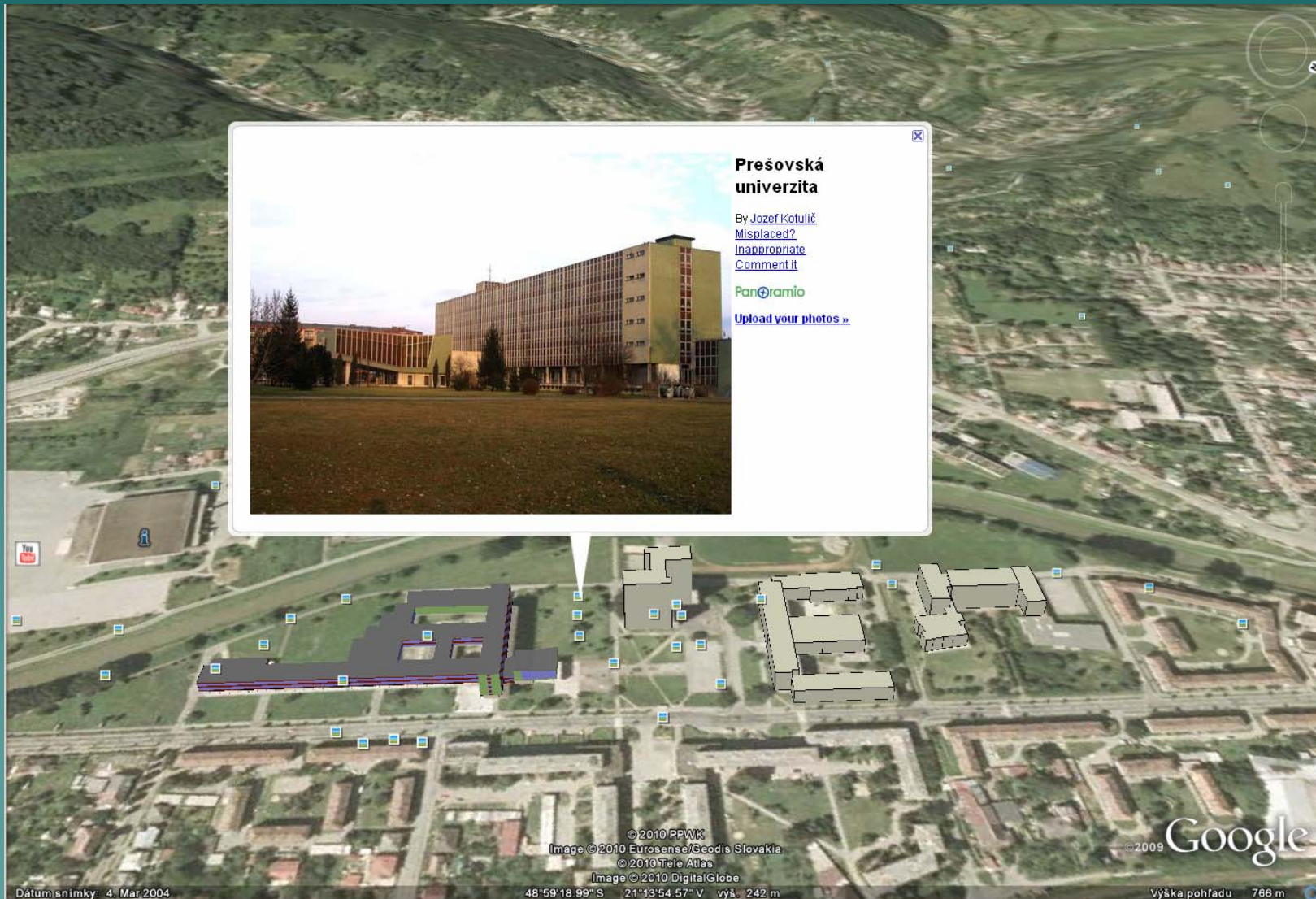
Aplikácie geopriestorového softvéru s otvoreným kódom vo vzdelávaní a výskume na Prešovskej univerzite

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Prešovská univerzita



Prešovská univerzita

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Image © 2010 Eurosense/Geodis Slovakia
© 2010 Tele Atlas
Image © 2010 DigitalGlobe

Dátum snímky: 4. Mar 2004

48°59'18.99" S 21°13'54.57" V výš. 242 m

©2009 Google

Výška pohľadu 766 m

GRASS GIS



- ◆ <http://grass.osgeo.org>
- ◆ Geographic Resources Analysis Support System
- ◆ obsahuje viac ako 300 modulov/príkazov
- ◆ Open-source/free softvér s licenciou GNU GPL (<http://www.gnu.org>)
- ◆ zdrojový kód ANSI C
- ◆ k dispozícii pre väčšinu hardvérových a softvérových platforiem
- ◆ vznik v 80. r. 20 st. ako public domain (Armáda USA)
- ◆ koncom 90. rokov prechod na GNU GPL

GRASS GIS - The World Leading Free Software GIS - SeaMonkey

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Home Bookmarks mozilla.org mozillaZine mozdev.org ING Konto Cený PHM - benzín, n...



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Welcome to GRASS GIS

You are at the official GRASS site in `mysql_pconnect()` ([mirror sites](#))
This site is updated daily: 07 Nov 2009

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Celebrating 25 years!





GRASS User map ([without pop-up](#))

Geographic Resources Analysis Support System

Commonly referred to as GRASS, this is free Geographic Information System (GIS) software used for geospatial data management and analysis, image processing, graphics/maps production, spatial modeling, and visualization. GRASS is currently used in academic and commercial settings around the world, as well as by many governmental agencies and environmental consulting companies. GRASS is an official project of the [Open Source Geospatial Foundation](#).

Module of the day:
[v.univar](#) Calculates univariate statistics for attribute. Variance and standard deviation is calculated only for points if specified.

Latest News! [XML](#) [RSS FEED](#)

- 17 Sep 2009: [GRASS 6.4.0 module synopsis published](#) - A list of all modules with GUI menu locations
- 09 Jun 2009: [GRASS 6.4.0 RC5 released](#) - Fifth release candidate of stable release 6.4.0 which includes the new graphical user interface, native MS-Windows support new functionality and bugfixes
- 02 Jun 2009: [New WinGrass 6.4.0RCsvn stand-alone package](#) - Please help test!
- 24 Apr 2009: [OSGeo welcomes 20 Google Summer of Code students](#) - Including 3 GRASS projects

Upcoming GRASS/FOSS4G related events: [XML](#) [RSS FEED](#)

- [Geoinformatics FCE CTU 2009 - Free and Open Source Software in Geoinformatics](#) - 17-18 Sep 2009, Prague, Czech Republic
- [FOSS4G 2009 in Sydney - Free and Open Source Software for Geospatial](#) - 20-23 Oct 2009, Sydney, Australia

[News Archive](#) | [Submit related announcements here!](#)

Oficiálna webová stránka GIS-u GRASS

http://mapserver.gdf-hannover.de - GRASS GIS | Worldwide GRASS GIS Usermap - SeaMonkey

Scale 1: 7200000 Zoom ± [- | 0 | +]

Worldwide GRASS GIS Usermap
Registered GRASS users: 1245

- Worldwide GRASS-Users
- Qgis-Users
- Mapbender-Users
- MapServer-Users

0 79 158 237 316 395 km

This service is brought to you by GDF Hannover. | Data is provided from several datasources using OGC-standards.
Powered by PostGIS, MapServer and pmapper

X: 19 Y: 48

Registrovaní používatelia GRASS-u

Welcome to the Quantum GIS Project - SeaMonkey

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 **Quantum GIS** 

Wiki | Blog | Forum | Bugs | Shop | Download

Quantum GIS

Version 1.4.0

"Enceladus"

The Quantum GIS project is pleased to announce the release of the QGIS development version 1.4.0 'Enceladus'. Sourcecode and binary packages are available from the [download area](#).

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Upcoming Events



FOSS4G 2010
Barcelona
SEP 6th - 9th

Welcome to the Quantum GIS Project

Quantum GIS (QGIS) is a user friendly Open Source Geographic Information System (GIS) licensed under the GNU General Public License. QGIS is an official project of the Open Source Geospatial Foundation (OSGeo). It runs on Linux, Unix, Mac OSX, and Windows and supports numerous vector, raster, and database formats and functionalities.

Quantum GIS provides a continuously growing number of capabilities provided by core functions and plugins. You can visualize, manage, edit, analyse data, and compose printable maps. Get a first impression with some screenshots and a more detailed feature list.

Quantum GIS is a volunteer driven project. We welcome contributions from in the form of code contributions, bug fixes, bug reports, contributed documentation, advocacy and supporting other users on our mailing lists and the QGIS Forum. If you are interested in actively supporting the project, you can find more information under the development menu and on the QGIS Wiki. We also welcome financial contributions in the form of sponsoring and funding.

GRASS6.3.cvs GIS Manager - baranja topobook

File Config Raster Vector Imagery Grid3D Databases Help

Map Layers for Display 1

- contours5K
- baranja_dem5K.z

Display vector maps

Opaque Transparent

Vector map: contours5K

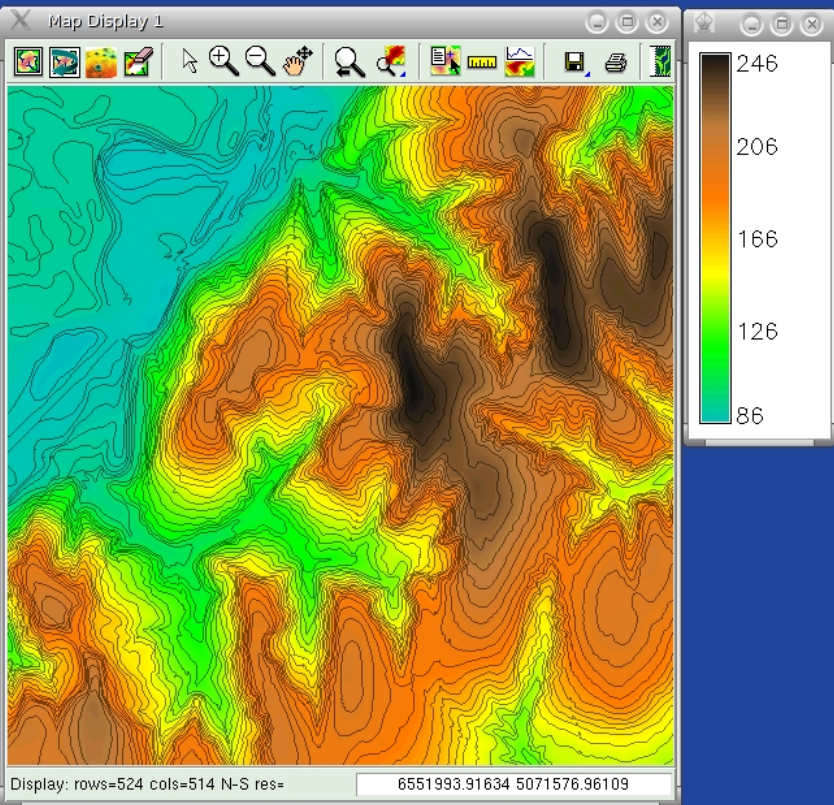
Display:
 shapes
 categories
 topology
 line directions
 points
 lines
 boundaries
 centroids
 areas
 faces

Point symbols: icon basic/circle size 5

Draw lines:
 color
 width 1 (pixels)

Fill areas:
 color
 random colors
 GRASSRGB column colors

Welcome to GRASS GIS



grass@localhost: /home/grass - Shell - Konsole

Session Edit View Bookmarks Settings Help

```

GRASS 6.3.cvs (baranja):~ > d.erase
GRASS 6.3.cvs (baranja):~ > d.legend -m baranja_dem5K.z

Buttons:
Left: Establish a corner
Middle: Cancel
Right: Accept box for legend

GRASS 6.3.cvs (baranja):~ >
  
```

Shell

Output - GIS.m

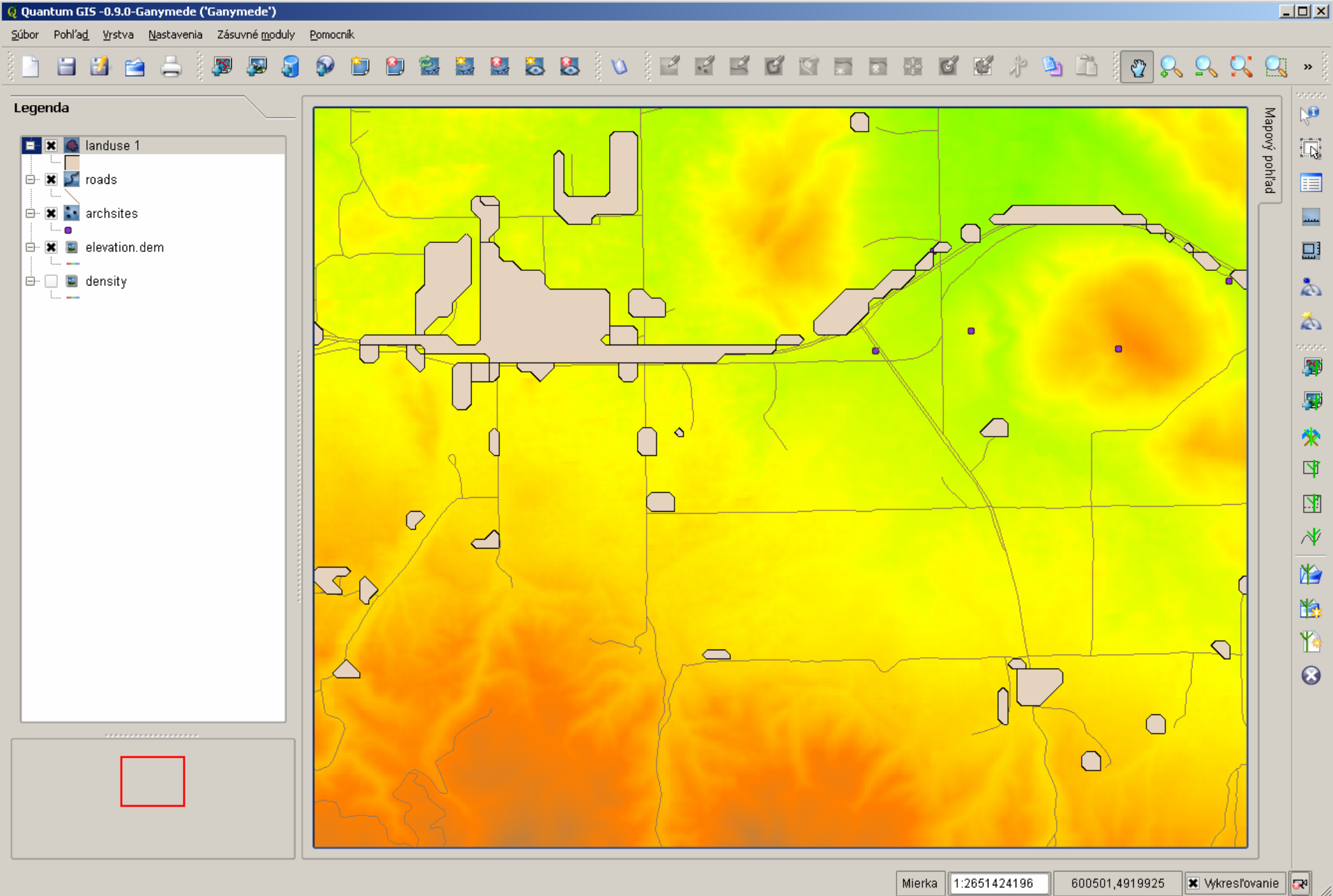
```

g.pnmcomp in=4356.2.ppm,4356.3.ppm
mask=4356.2.pgm,4356.3.pgm opacity=1.00,0.50
background=255:255:255 width=514 height=524
output=4356.1.ppm
  
```

Save Clear

Run Run (Background) Run UI Run in Xterm

GRASS 6.3, Mandriva Linux



Quantum GIS (SK)+GRASS plugin

Výuka na Prešovskej univerzite

- ◆ geografické odbory (Bc., Mgr., PhD.)
- ◆ Geografické informačné systémy 1-4, Geoinformatika a kartografia 1-2
- ◆ Bc. - základný kurz na báze ArcView GIS, výberové predmety QGIS, GRASS GIS
- ◆ Mgr., PhD. – metodologické príklady, realizácia diplomových a dizertačných prác
- ◆ pre technicky zdatných možnosť tvorby vlastného open-source kódu a jeho integrácie do existujúceho projektu (napr. GRASS GIS)

Výskum a vývoj na Prešovskej univerzite

- ◆ JH - člen vývojárskeho tímu GRASS-u od začiatku 90. rokov
- ◆ vývoj viacerých modulov: r.sun, r.flow, r.sim.*, v.surf.rst, atď.
- ◆ diplomová práca T. Pauditša – vývoj a programovanie nových 3D nástrojov (NVIZ, r3.mapcalc)
- ◆ realizácia výskumných projektov, ktorých súčasťou je tvorba open-source kódu

Potential photovoltaic electricity production in urban area (annual production)

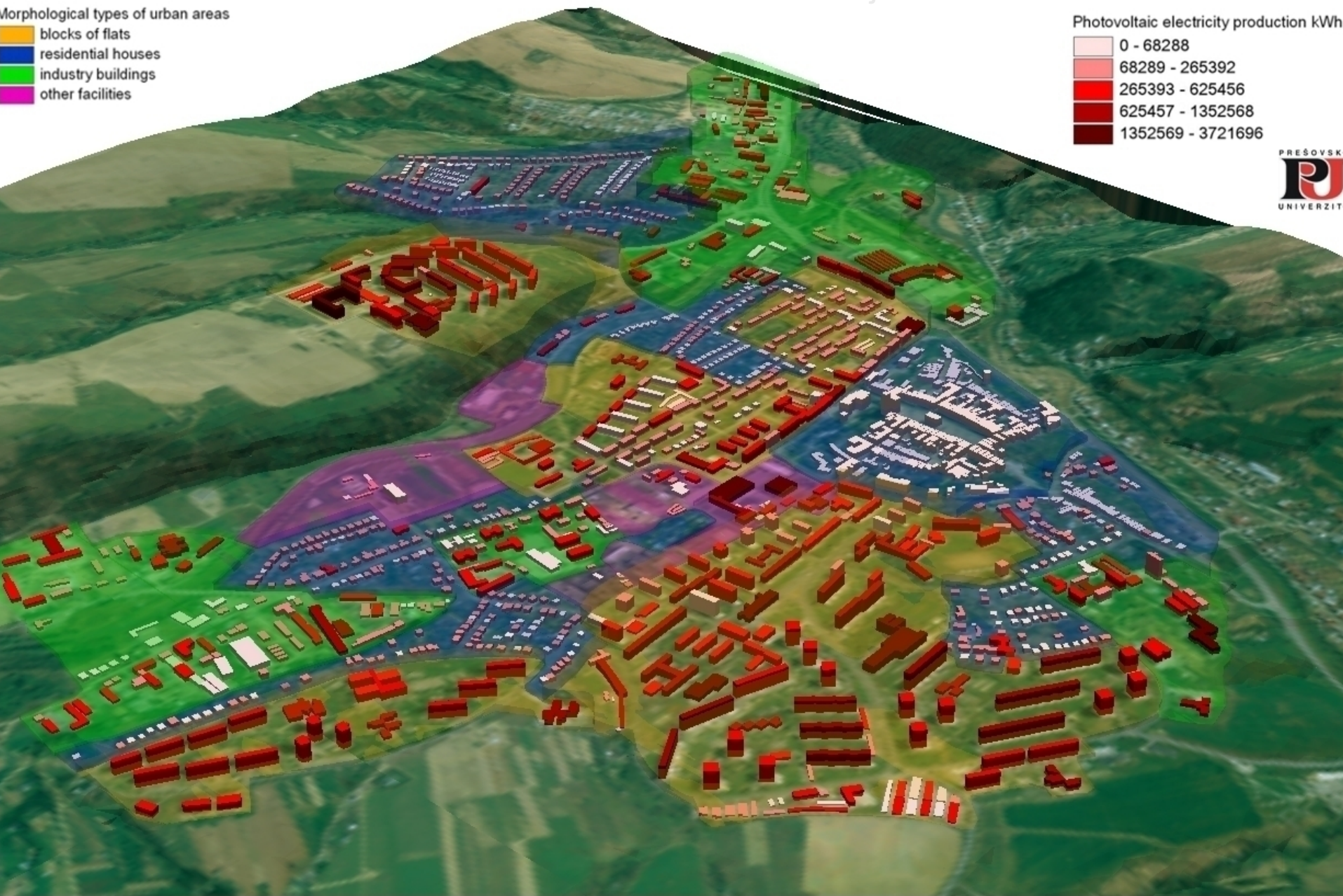
Bardejov

Morphological types of urban areas

- blocks of flats
- residential houses
- industry buildings
- other facilities

Photovoltaic electricity production kWh

- 0 - 68288
- 68289 - 265392
- 265393 - 625456
- 625457 - 1352568
- 1352569 - 3721696



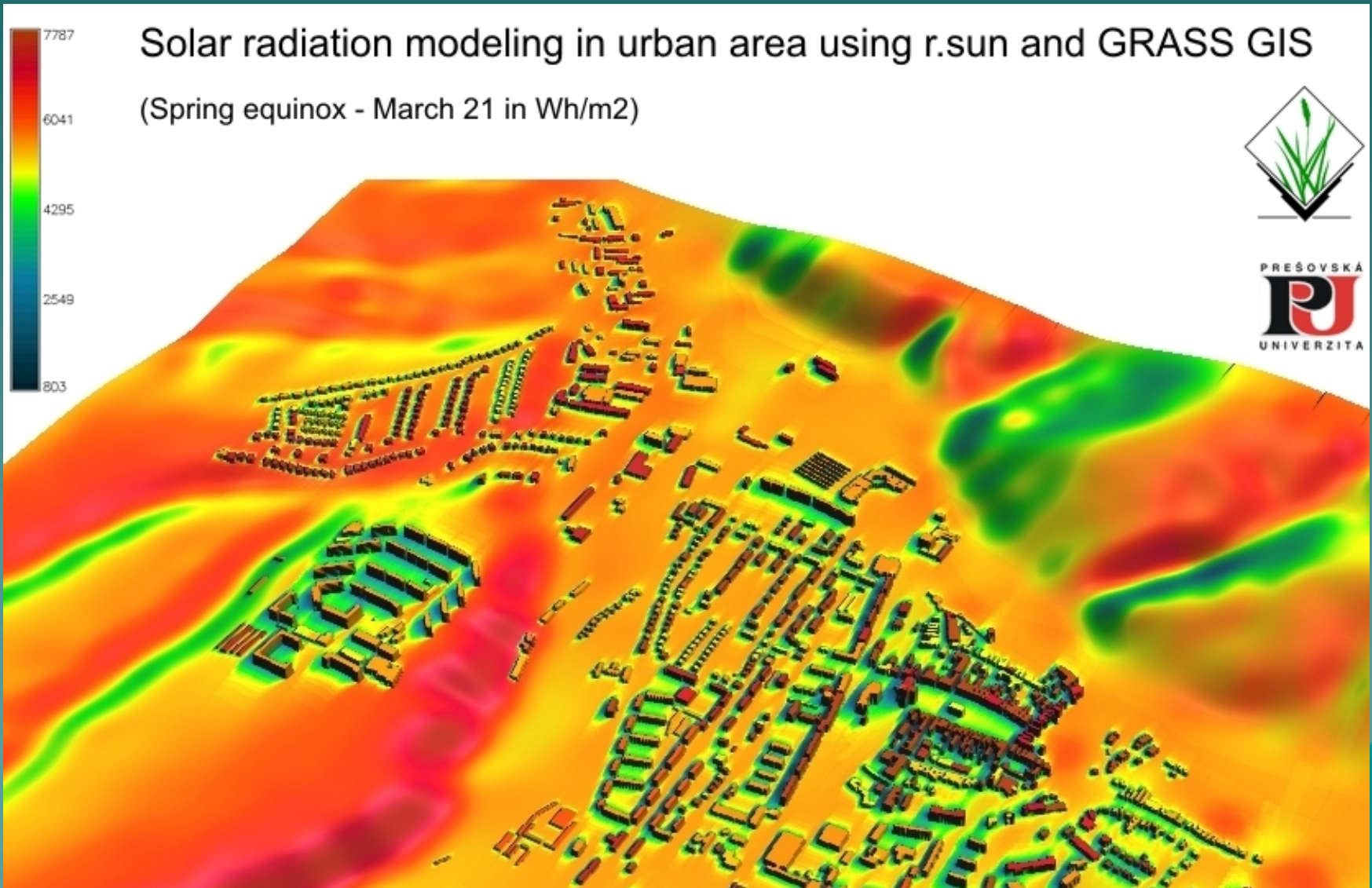
Hodnotenie fotovoltického potenciálu urbánnych oblastí



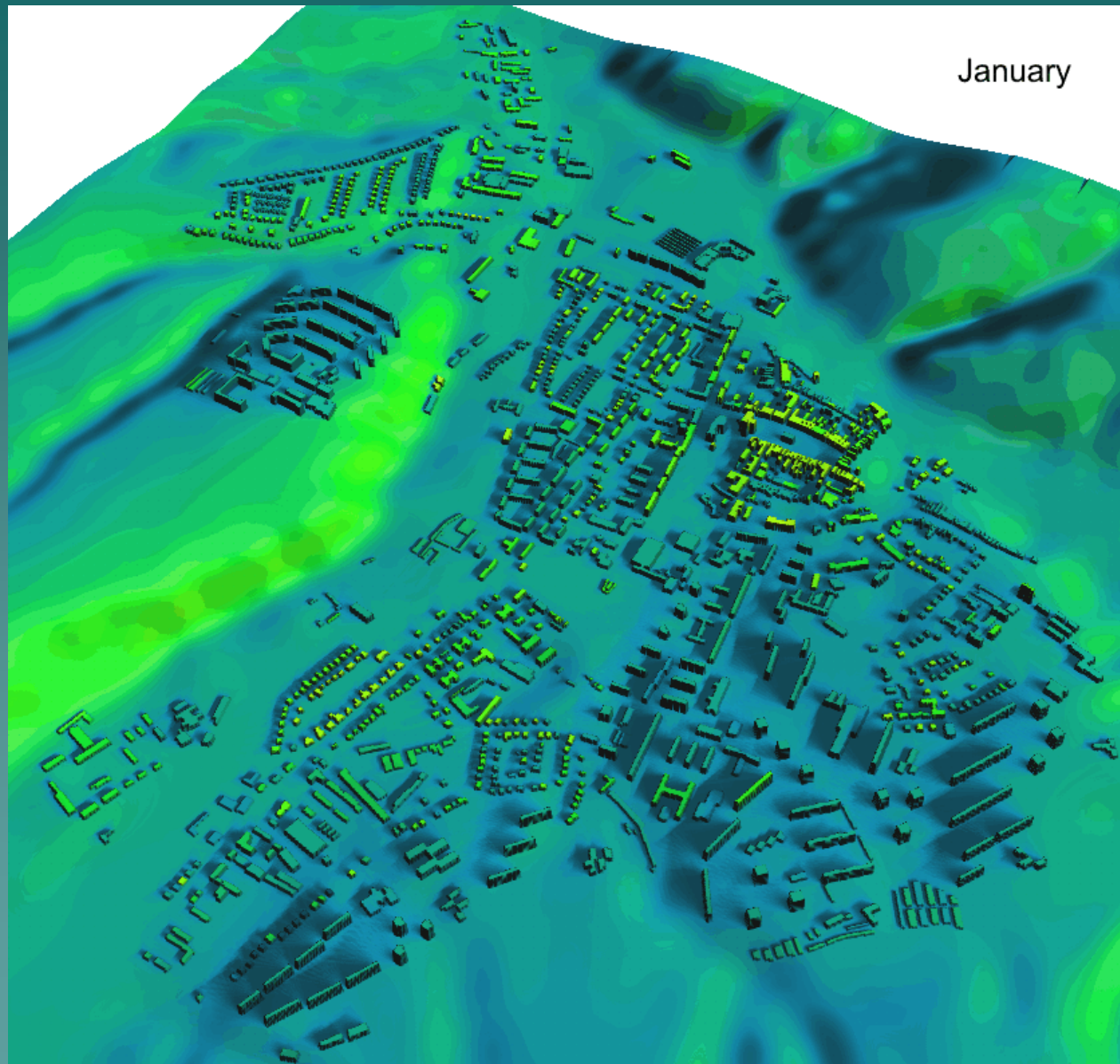
January



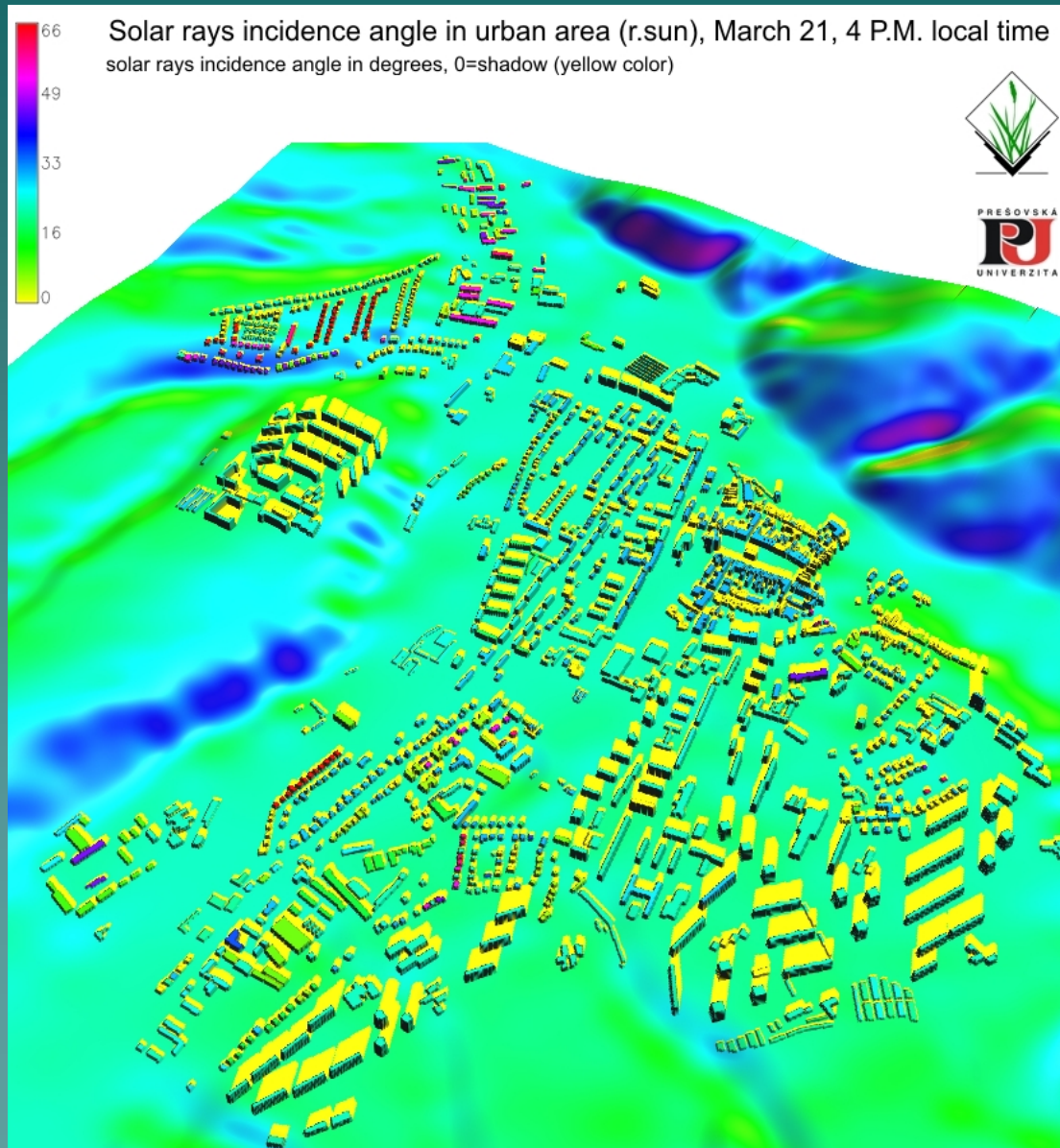
Analýza slnečného žiarenia v urbánnom prostredí



Analýza slnečného žiarenia v urbánnom prostredí

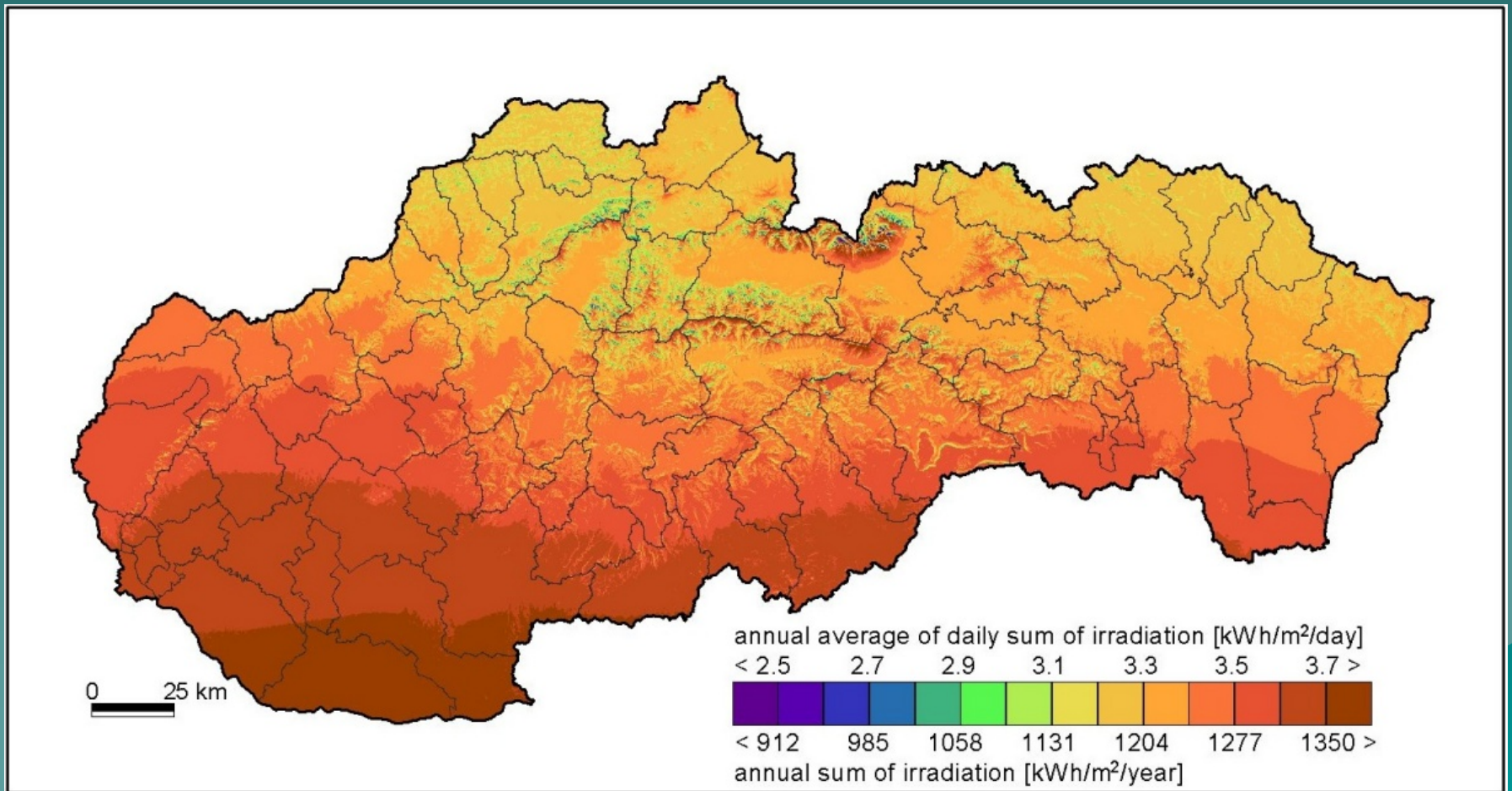


Analýza slnečného žiarenia v urbánnom prostredí



Solárna databáza Slovenska

Ročný úhrn globálneho žiarenia skutočnej oblohy pre optimálne naklonenú rovinu



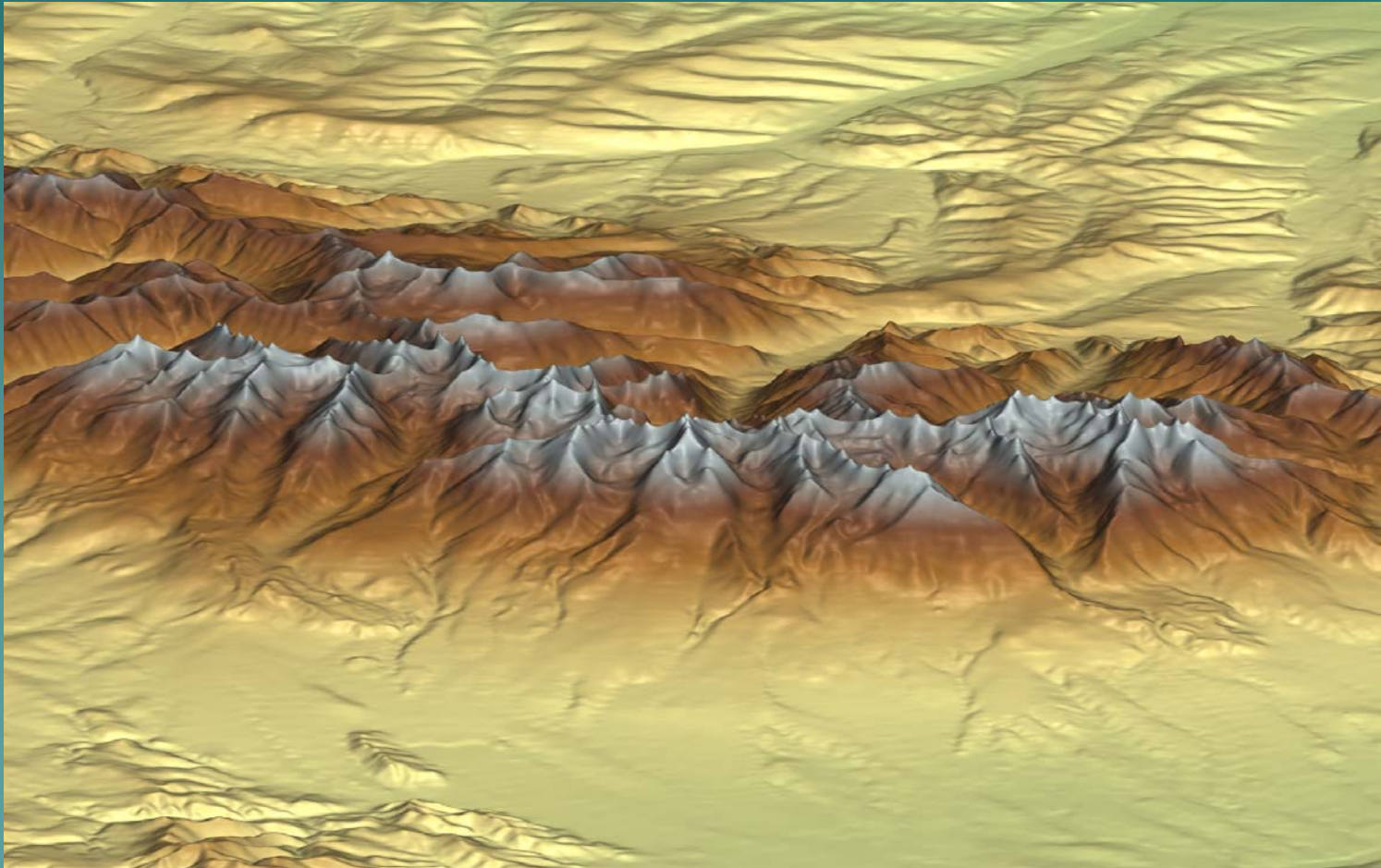
Google Maps: PVGIS online estimation utility

<http://re.jrc.ec.europa.eu/pvgis/apps3/pvest.php#>

The screenshot shows the PVGIS online estimation utility interface within a SeaMonkey browser window. The browser's address bar displays the URL <http://re.jrc.ec.europa.eu/pvgis/apps3/pvest.php#>. The page header includes the JRC logo and the title "Photovoltaic Geographical Information System - Interactive Maps". Navigation links for "Contact" and "Important legal notice" are visible. The main interface is divided into a map area on the left and a configuration panel on the right. The map shows Europe with a color-coded solar radiation scale from 200 to 2000 kWh/m². The configuration panel, titled "Performance of Grid-connected PV", includes sections for "PV Estimation" (with tabs for "Monthly radiation" and "Daily radiation"), "Performance of Grid-connected PV" (with a "Crystalline silicon" dropdown), "Fixed mounting options" (with a "Free-standing" dropdown), "Tracking options" (with checkboxes for "Vertical axis", "Inclined axis", and "2-axis tracking"), and "Output options" (with radio buttons for "Web page", "Text file", and "PDF"). A "Calculate" button and a "[help]" link are at the bottom of the configuration panel. The browser's status bar at the bottom shows the system tray and taskbar icons.

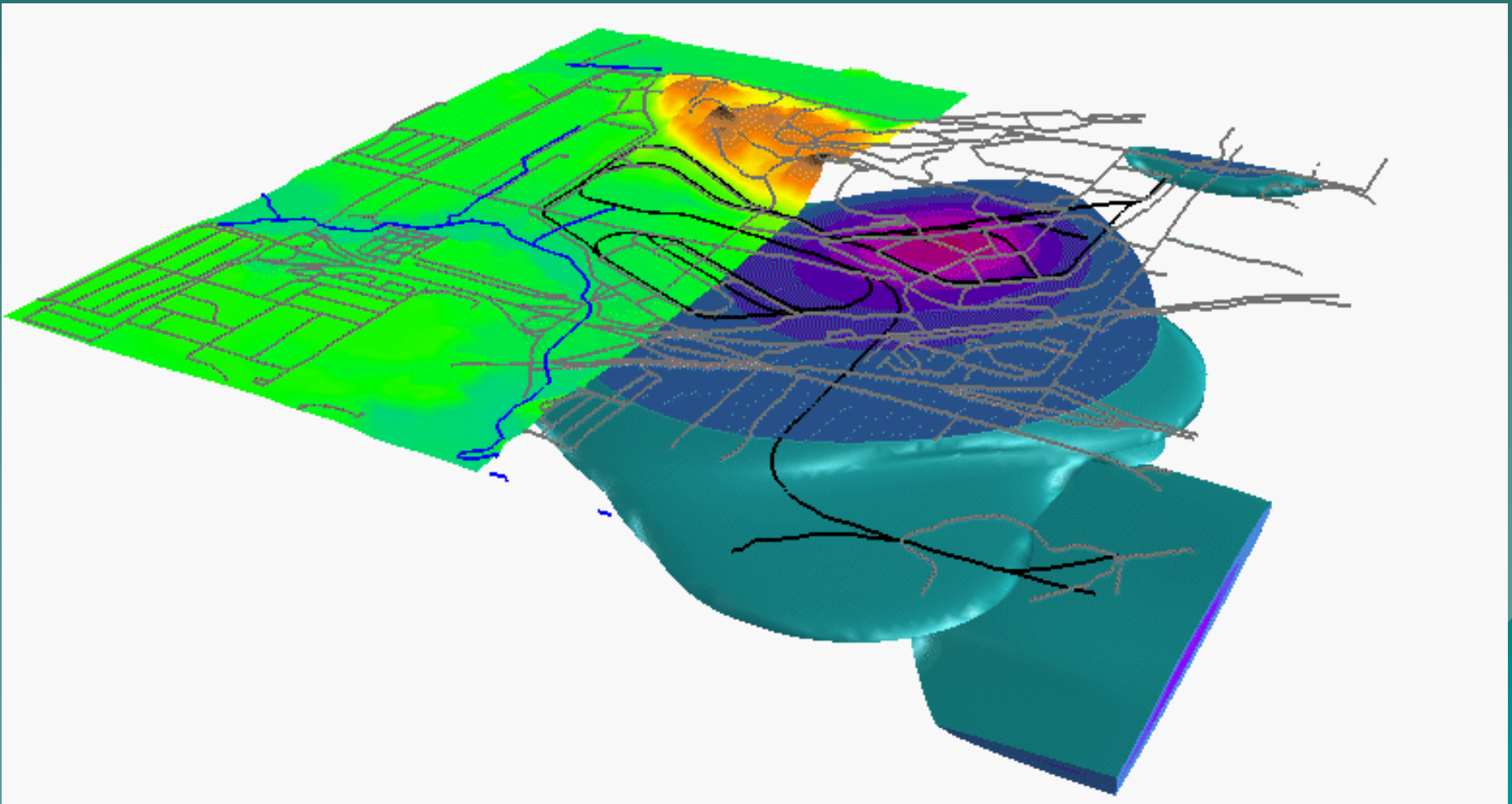
Multivariačná interpolácia

$$2\text{-D: } z=f(x,y)$$



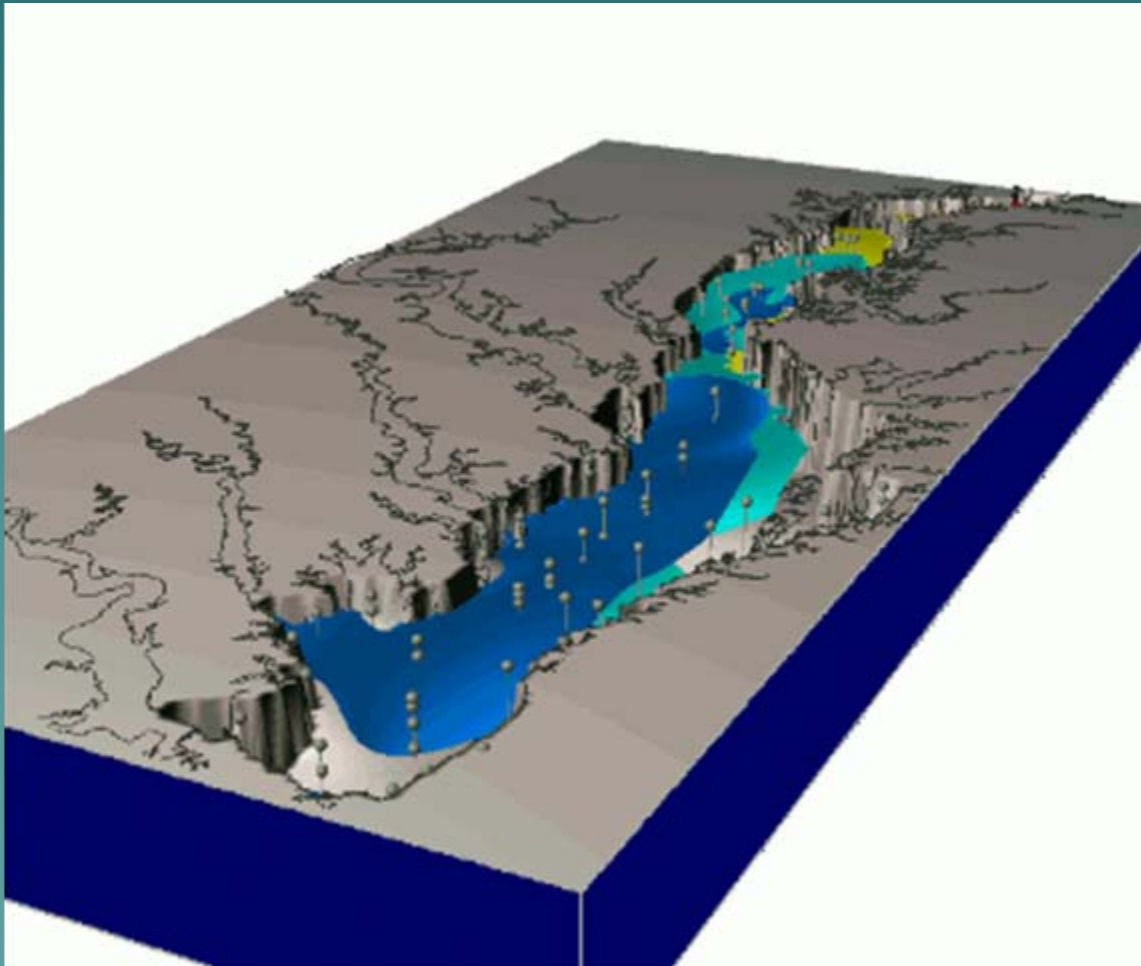
Multivariačná interpolácia

$$3\text{-D: } w=f(x,y,z)$$



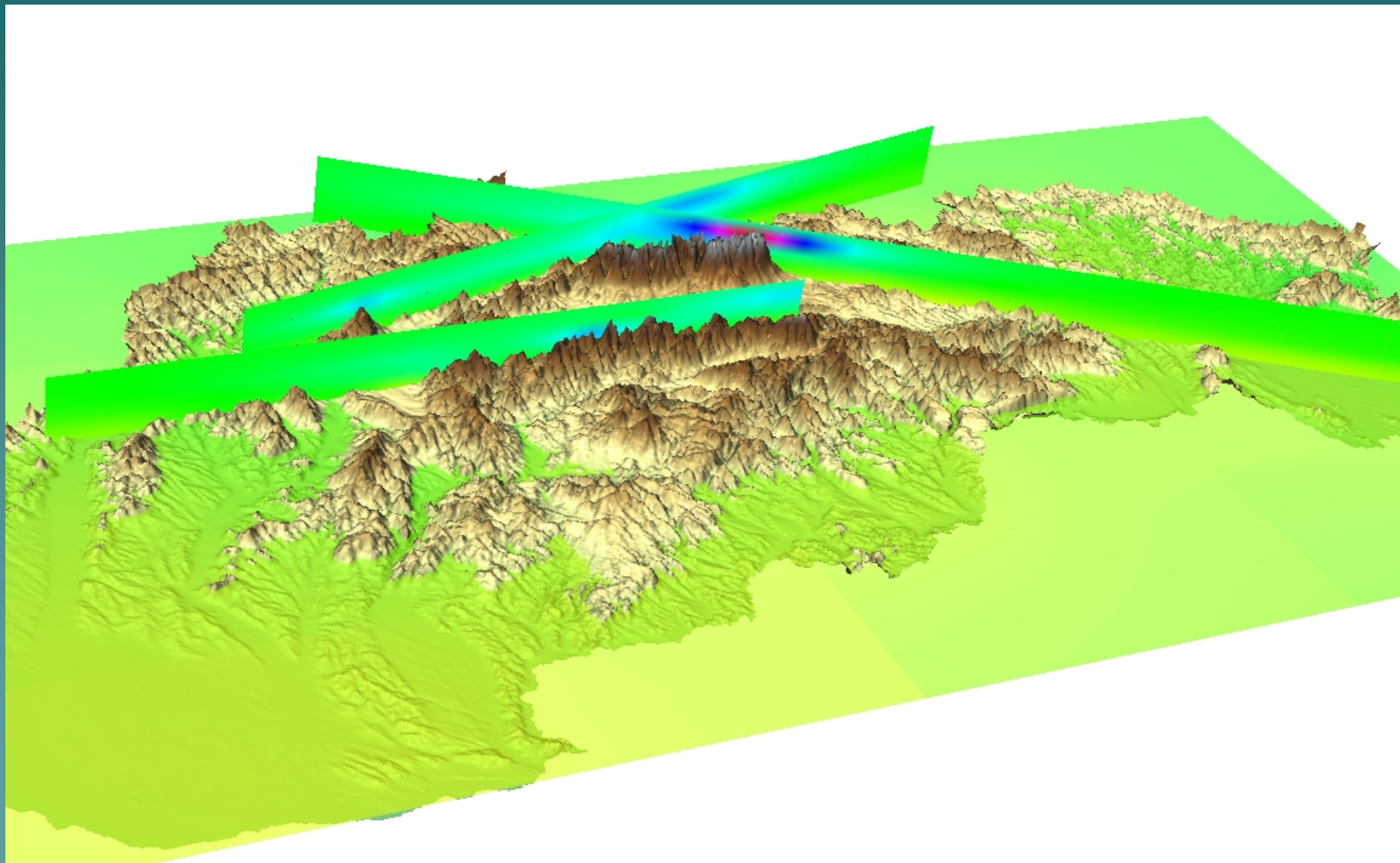
Multivariačná interpolácia

$$4\text{-D: } w=f(x,y,z,t)$$



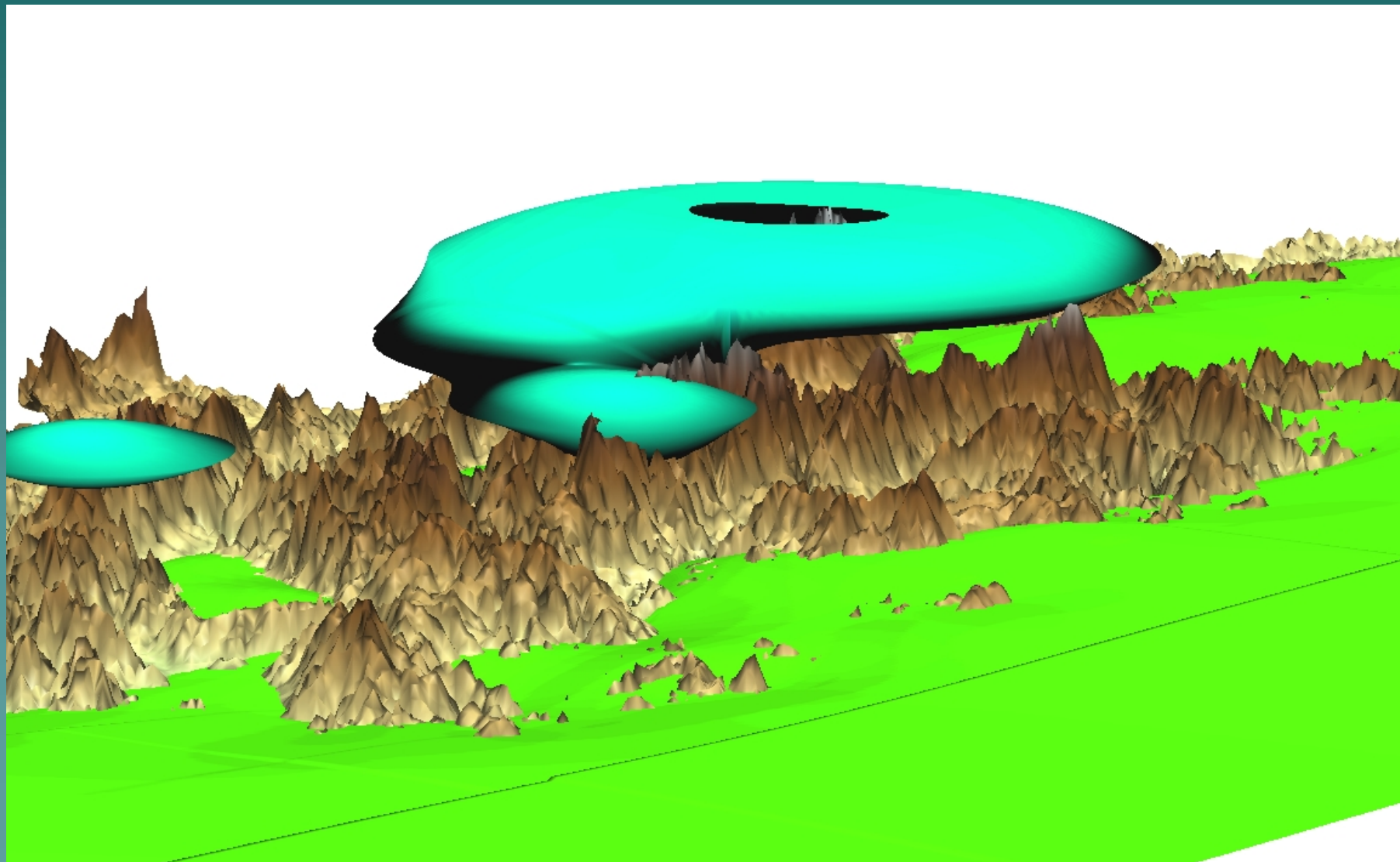
Interpolácia zrážok s vplyvom georeliéfu

Vertikálne a horizontálne rezy



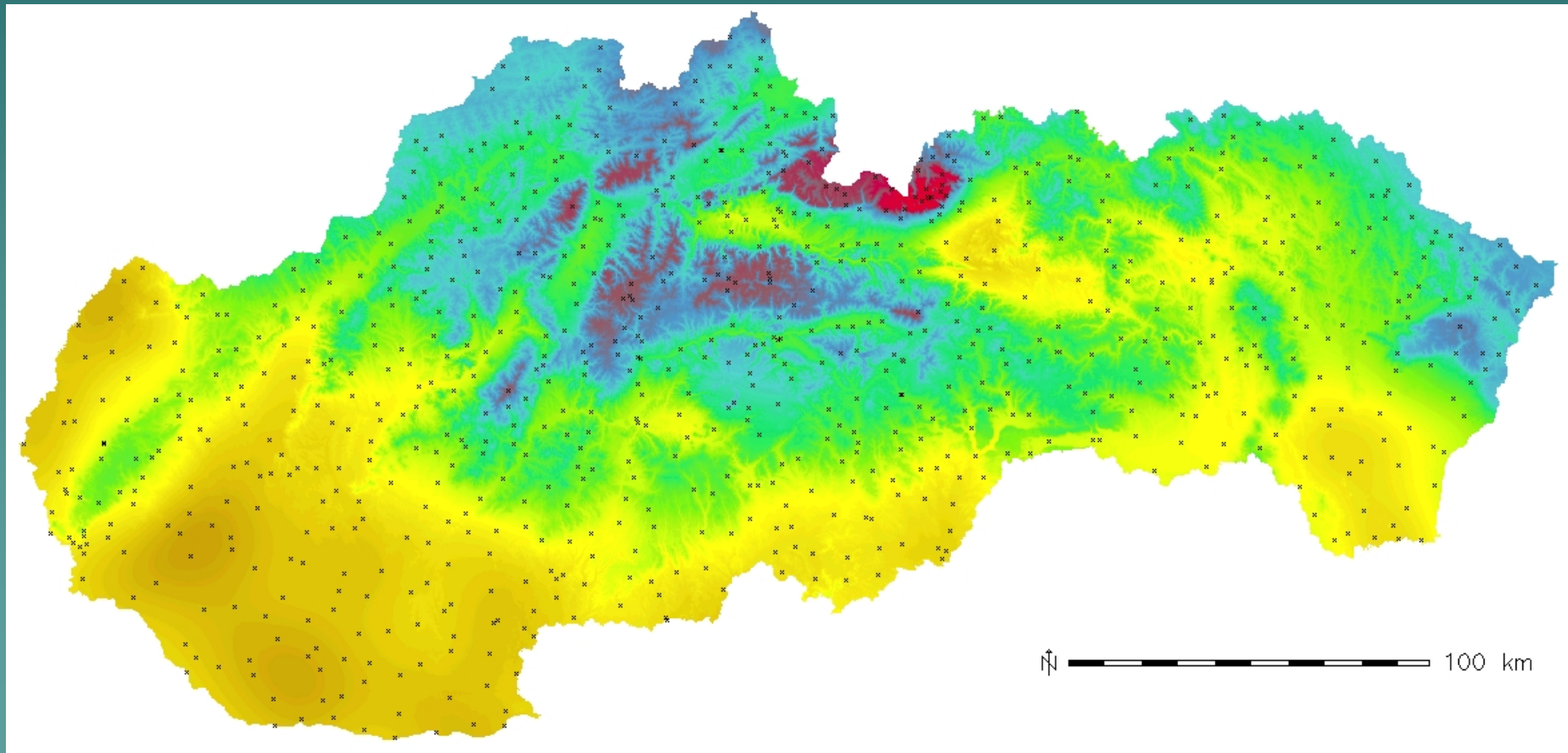
Interpolácia zrážok s vplyvom georeliéfu

Izopovrchy (1250 a 800 mm/rok)

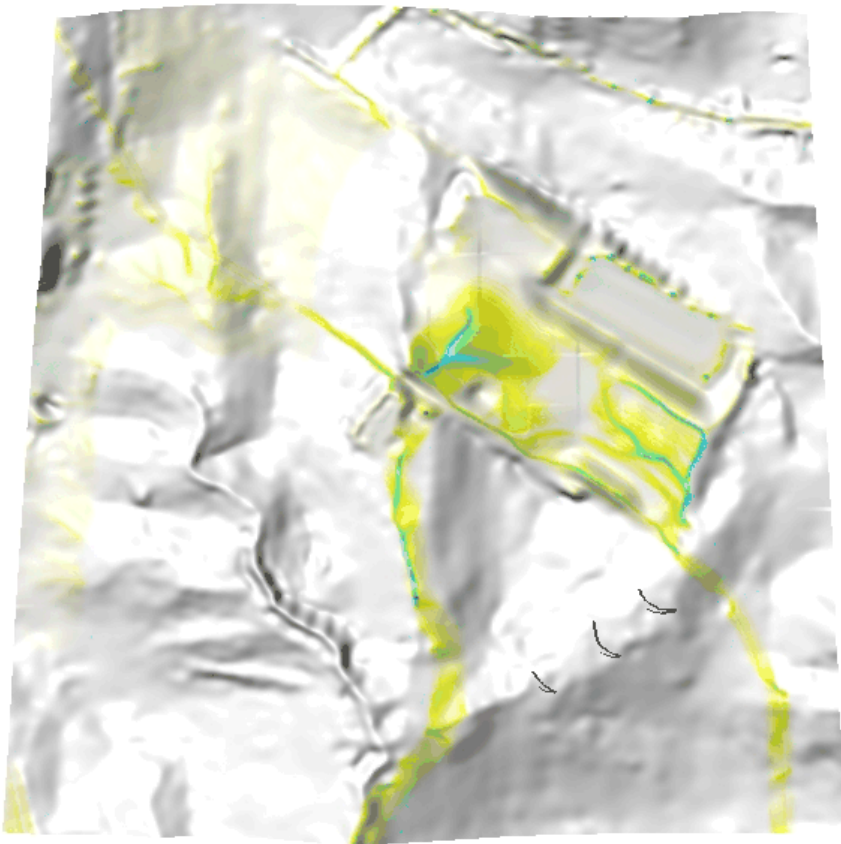


Interpolácia zrážok s vplyvom georeliéfu - zvýšenie rozlíšenia (downscaling)

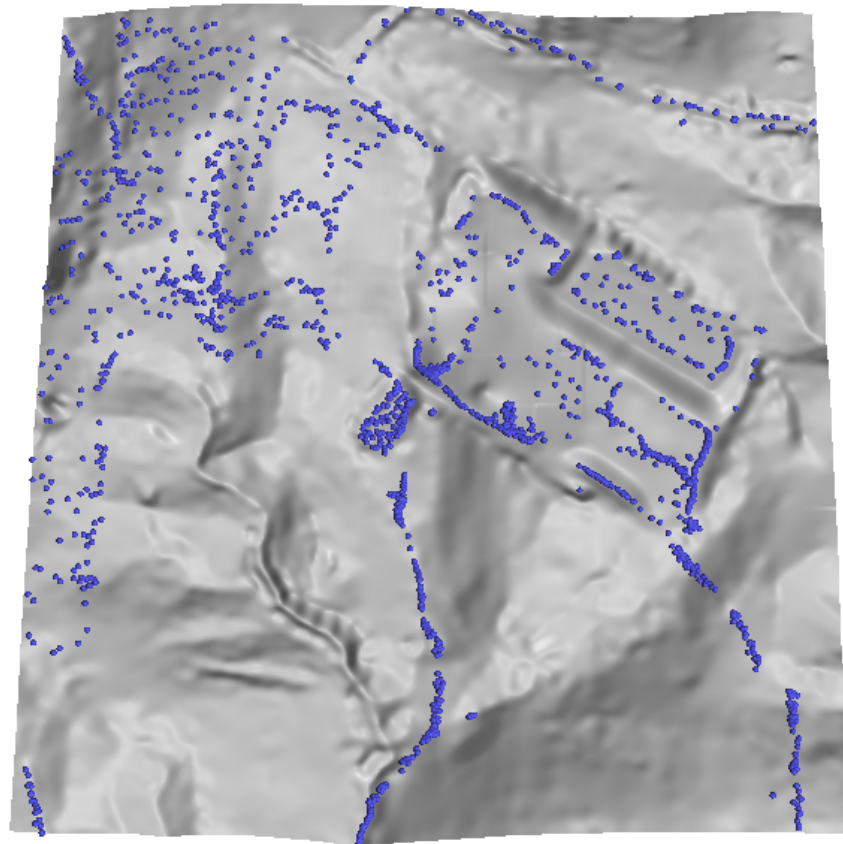
795 vstup. bodov, 3-D interpolácia s pomocou DMR so 100 m rozlíšením



Povrchový tok vody simulovaný príkazom r.sim.water v GRASS-e



reprezentácia poľom



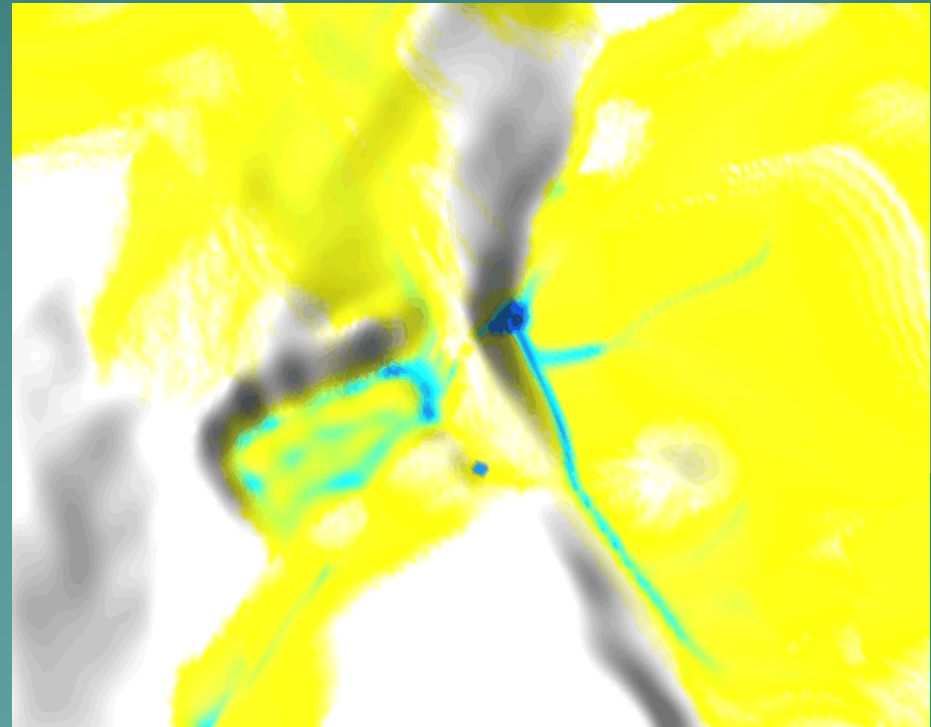
reprezentácia časticami
(zobrazené 1% častíc)

Preferenčný tok



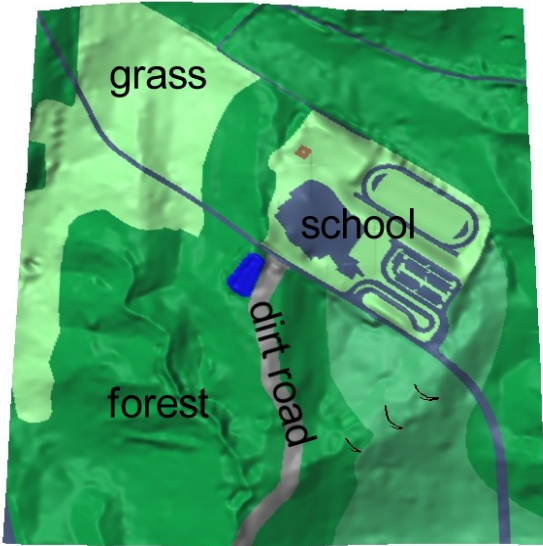
vytvorená retenčná nádrž a
prívodná rúra

simulácia efektu rúry
pomocou preferenčného
toku

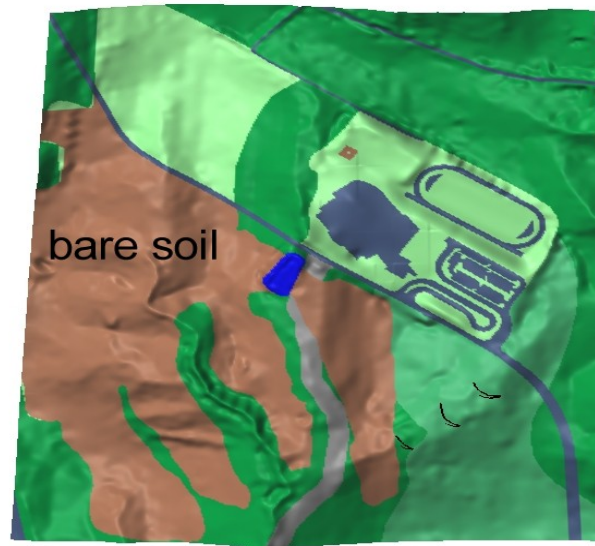


Plánovanie golfového ihriska

evalvačné scenáre



1. pred výstavbou



2. počas výstavby

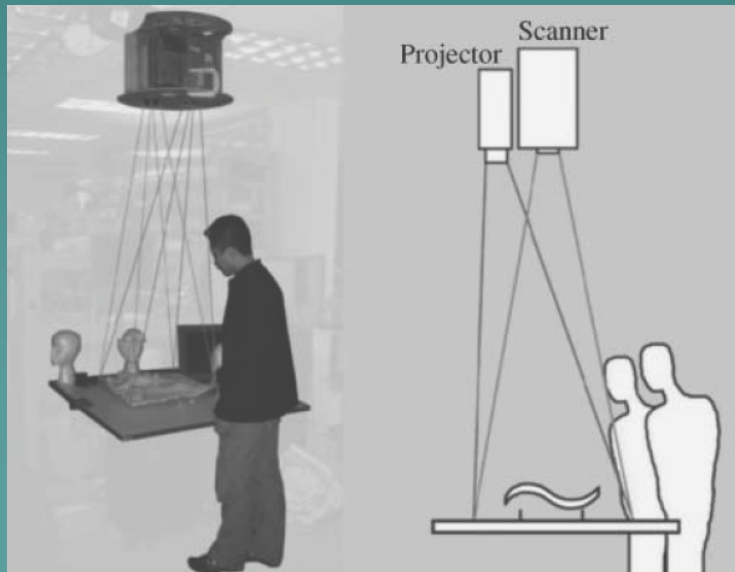
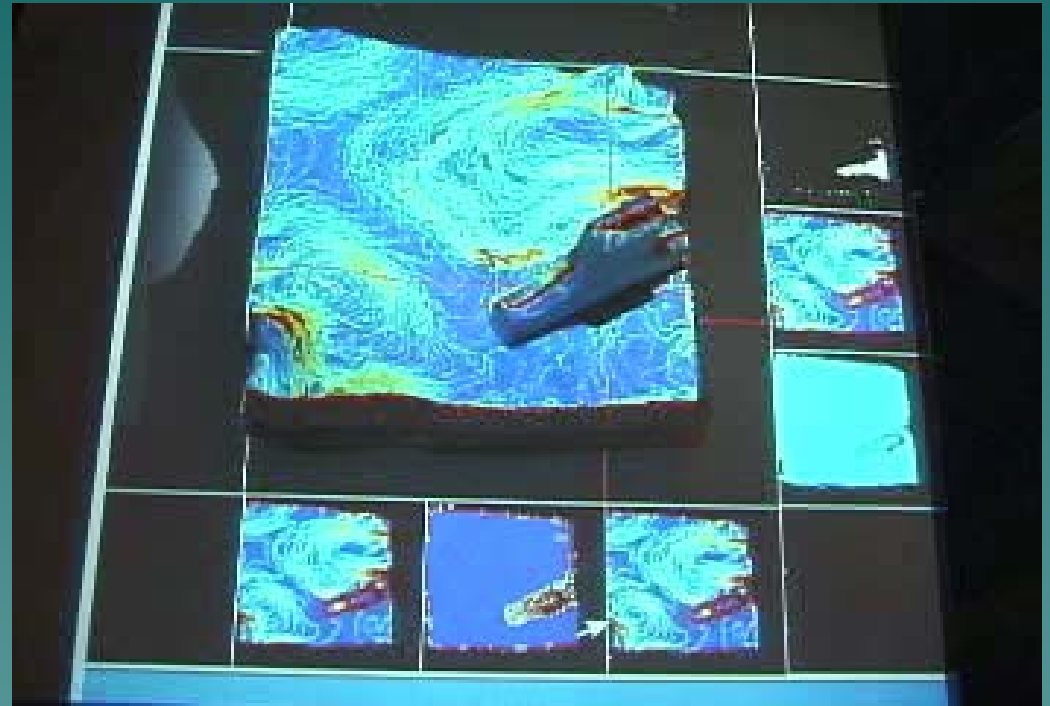


3. po výstavbe
(dokončené g. ihrisko)

„Hmatateľný“ GIS (Tangible GIS)



„Hmatateľný“ GIS (Tangible GIS)



Aktuálny vývoj

- ◆ rozvoj open-source nástrojov pre tvorbu a analýzu 3D modelov miest a 3D GISov
- ◆ medzinárodná spolupráca v oblasti aplikácií 3D modelov miest a dátového modelu CityGML (projekt COST TU0801)