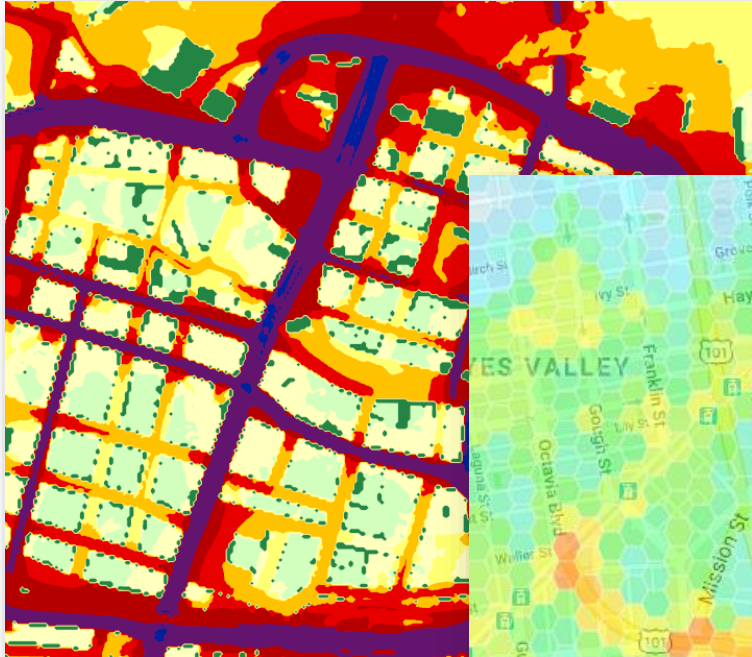


Third dimension in noise visualization

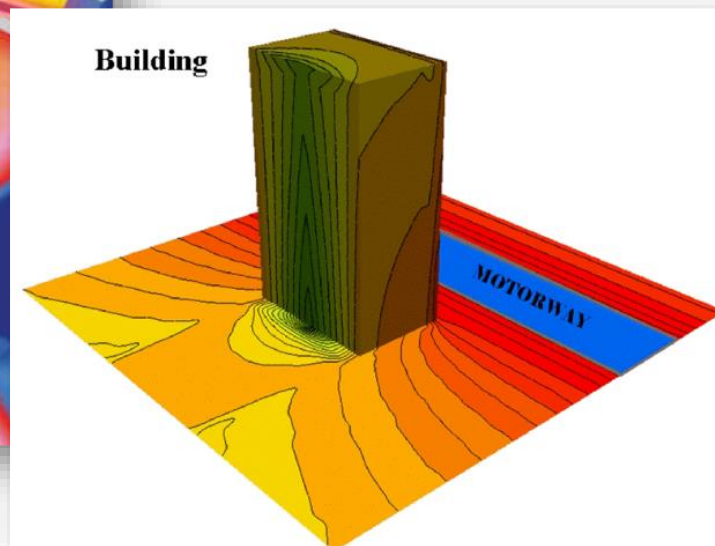
Daniel Beran, Karel Jedlička
Department of Geomatics



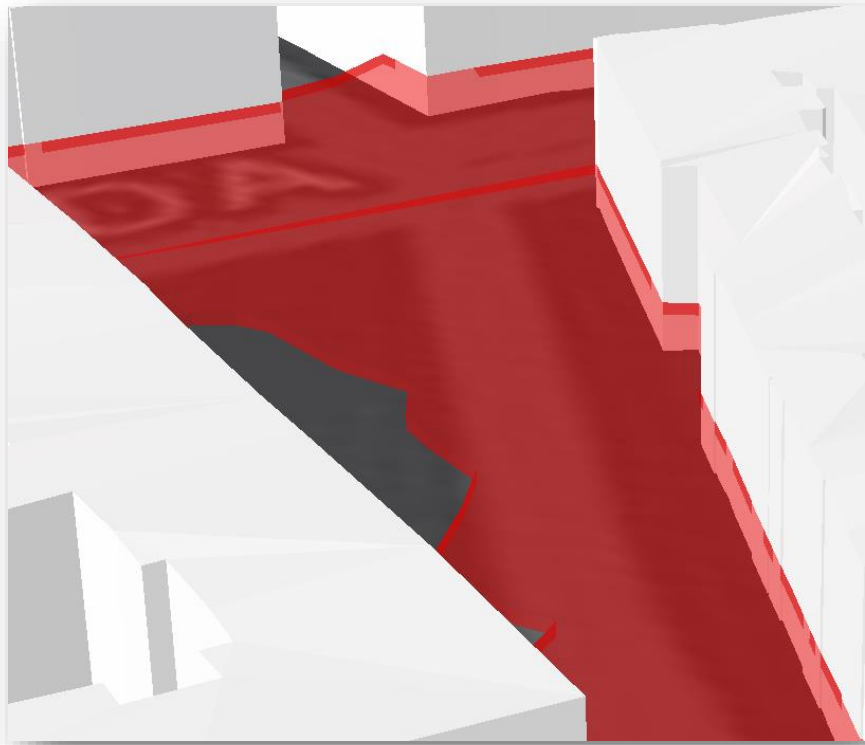
Current noise maps examples



Examples of noise in 3D

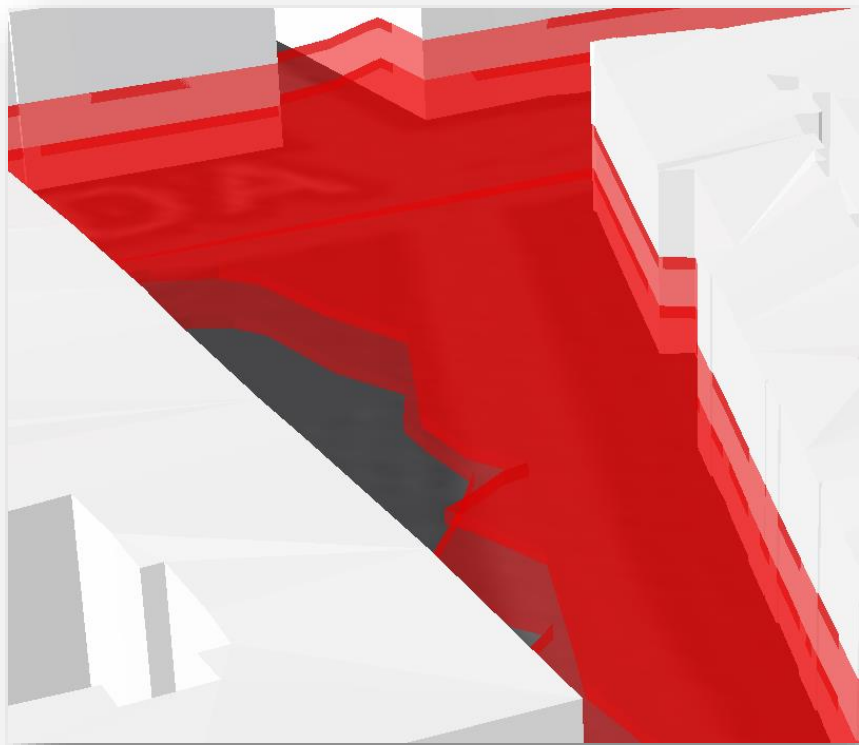


3D in noise visualization



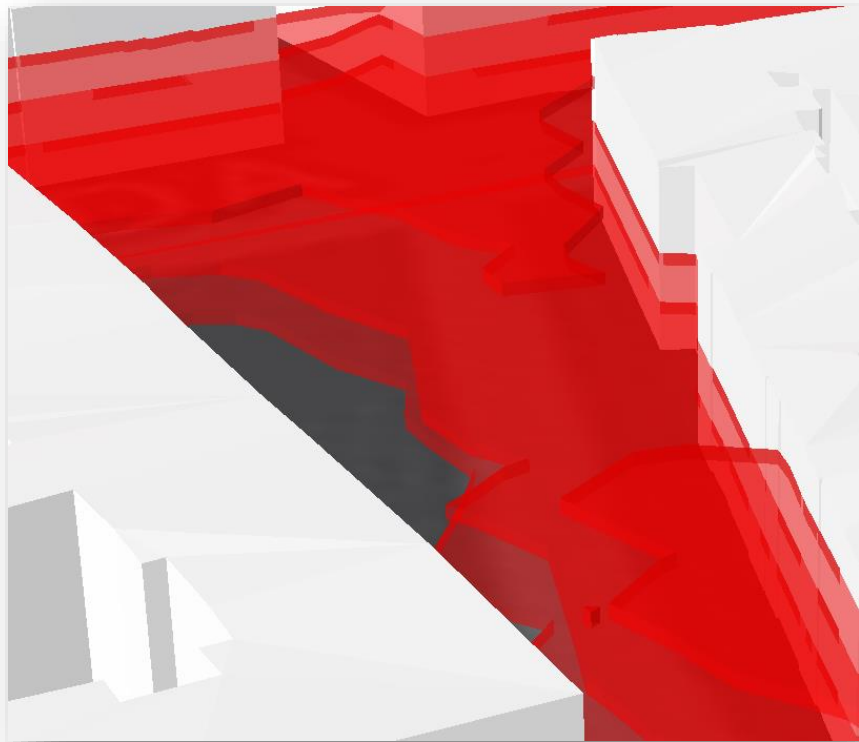
True 3D - Z axis is height

3D in noise visualization



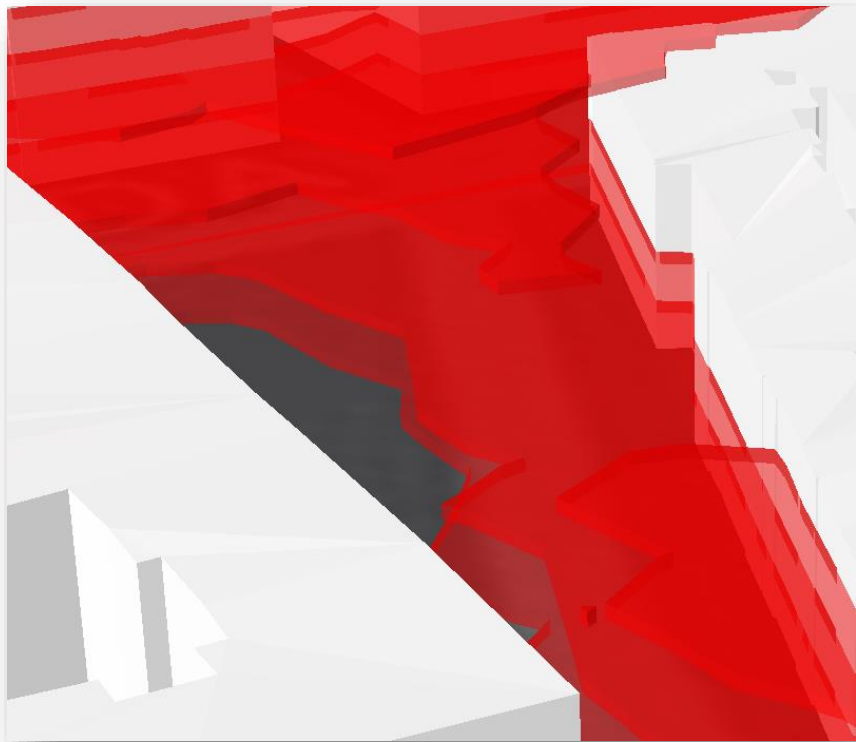
True 3D - Z axis is height

3D in noise visualization



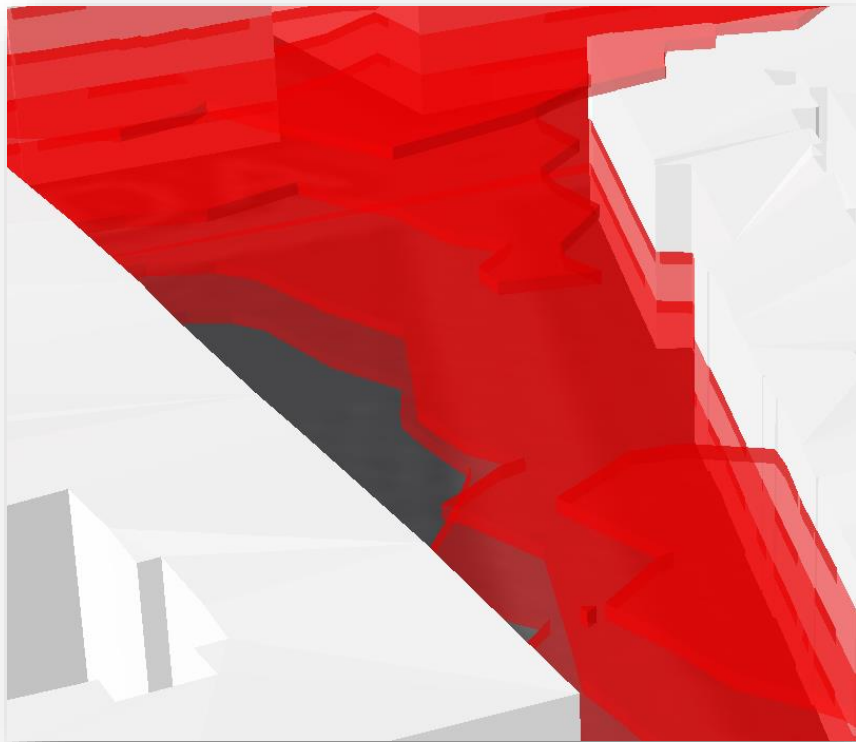
True 3D - Z axis is height

3D in noise visualization

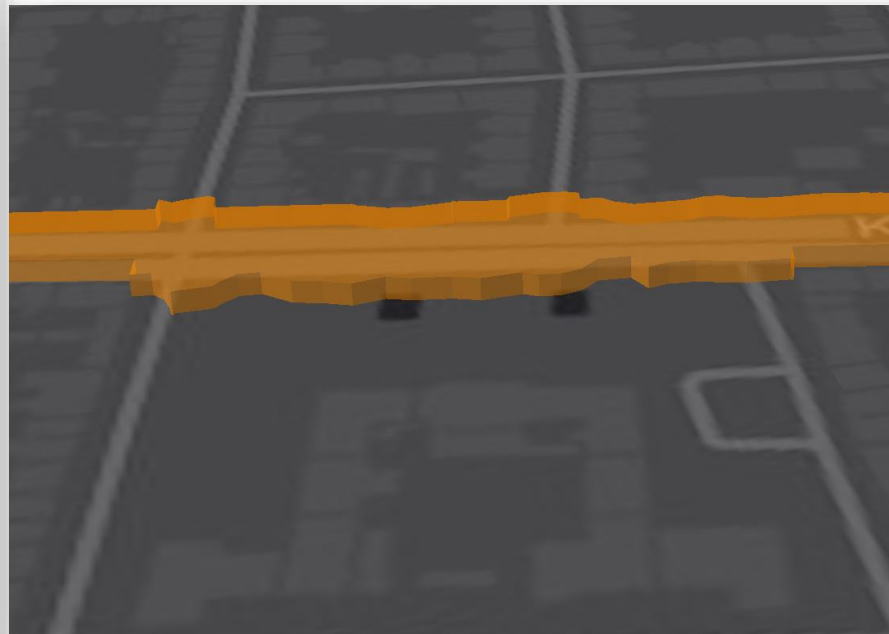


True 3D - Z axis is height

3D in noise visualization

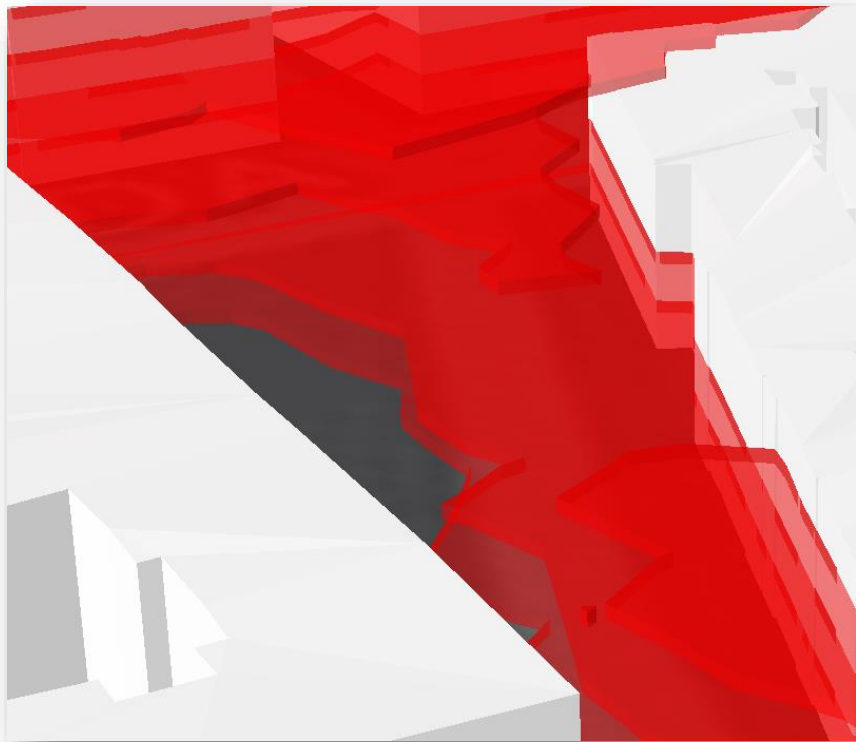


True 3D - Z axis is height

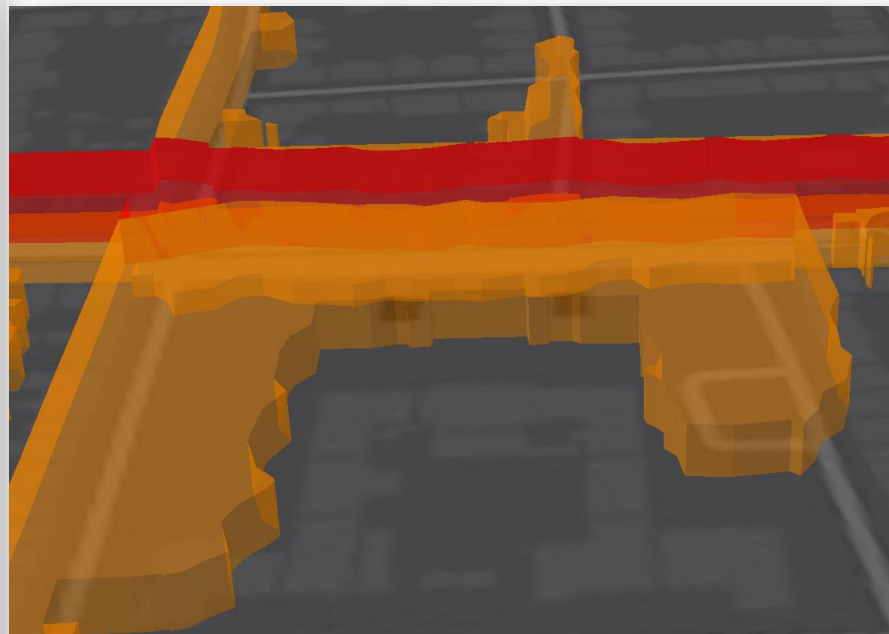


Space-Time cube - Z axis is time

3D in noise visualization

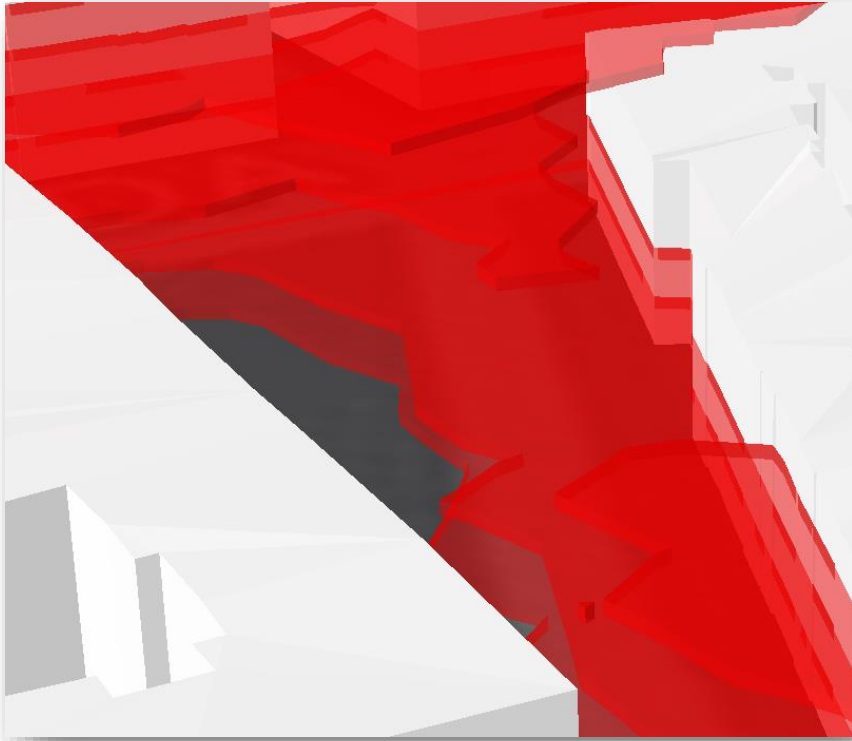


True 3D - Z axis is height

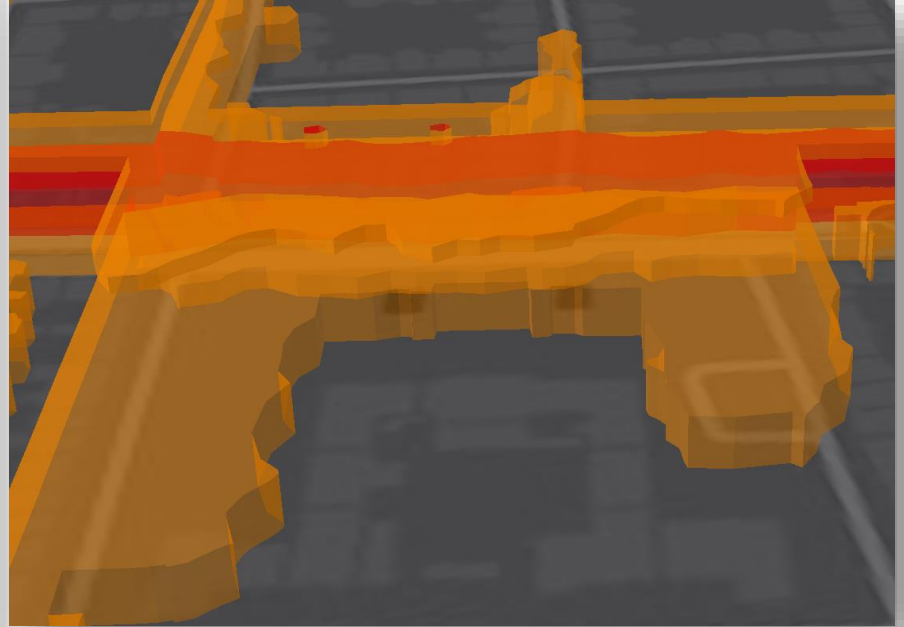


Space-Time cube - Z axis is time

3D in noise visualization

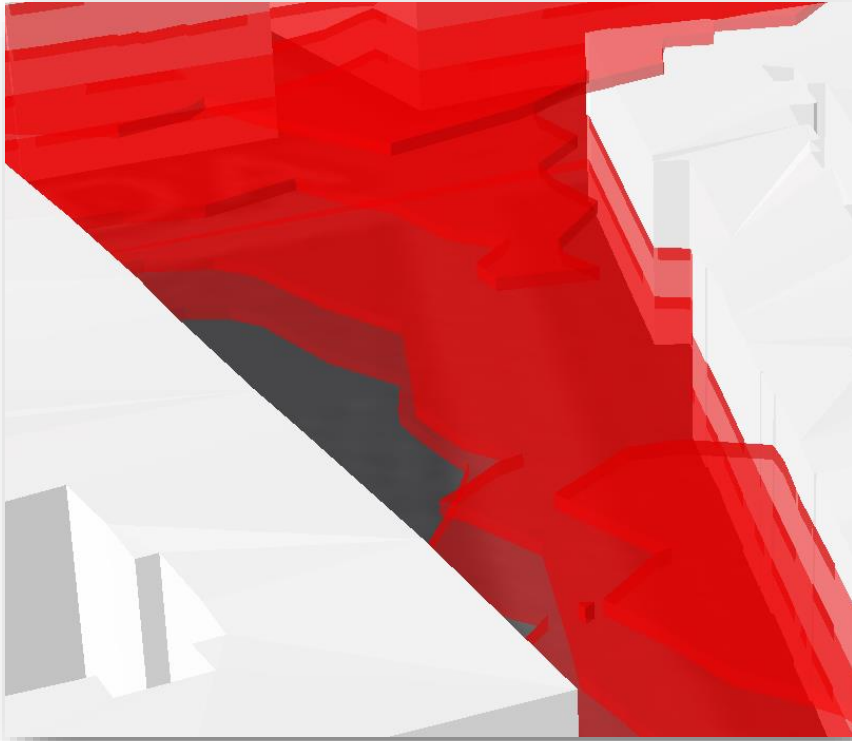


True 3D - Z axis is height

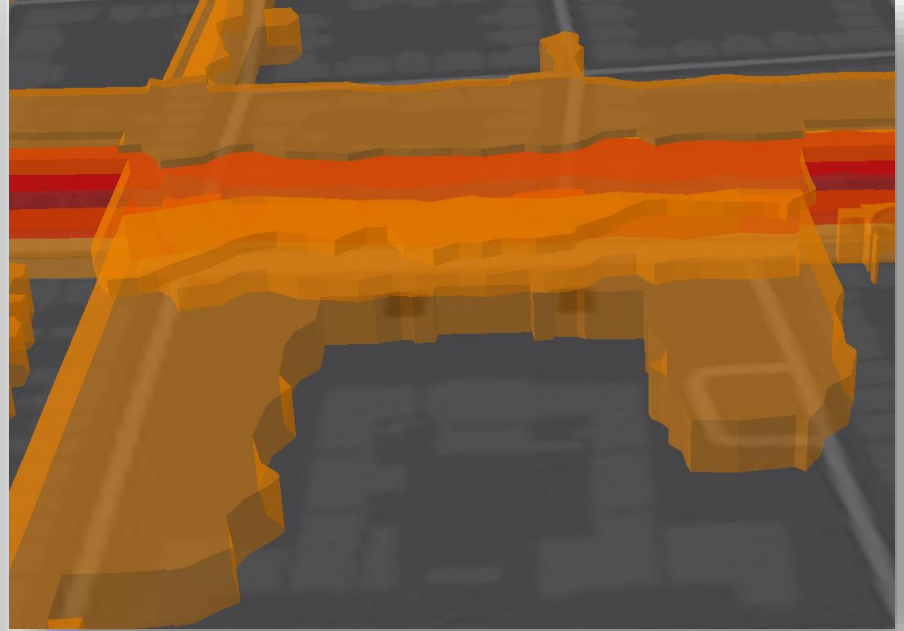


Space-Time cube - Z axis is time

3D in noise visualization



True 3D - Z axis is height

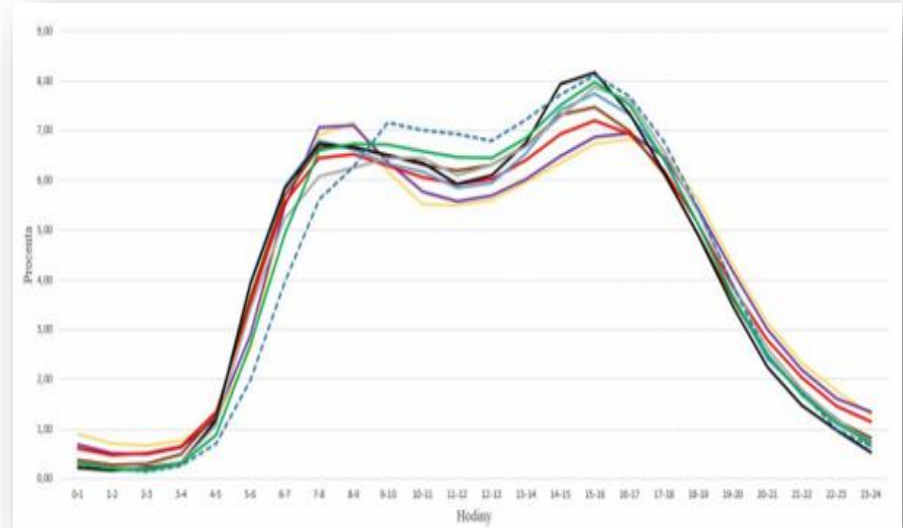


Space-Time cube - Z axis is time

Traffic data for noise modelling



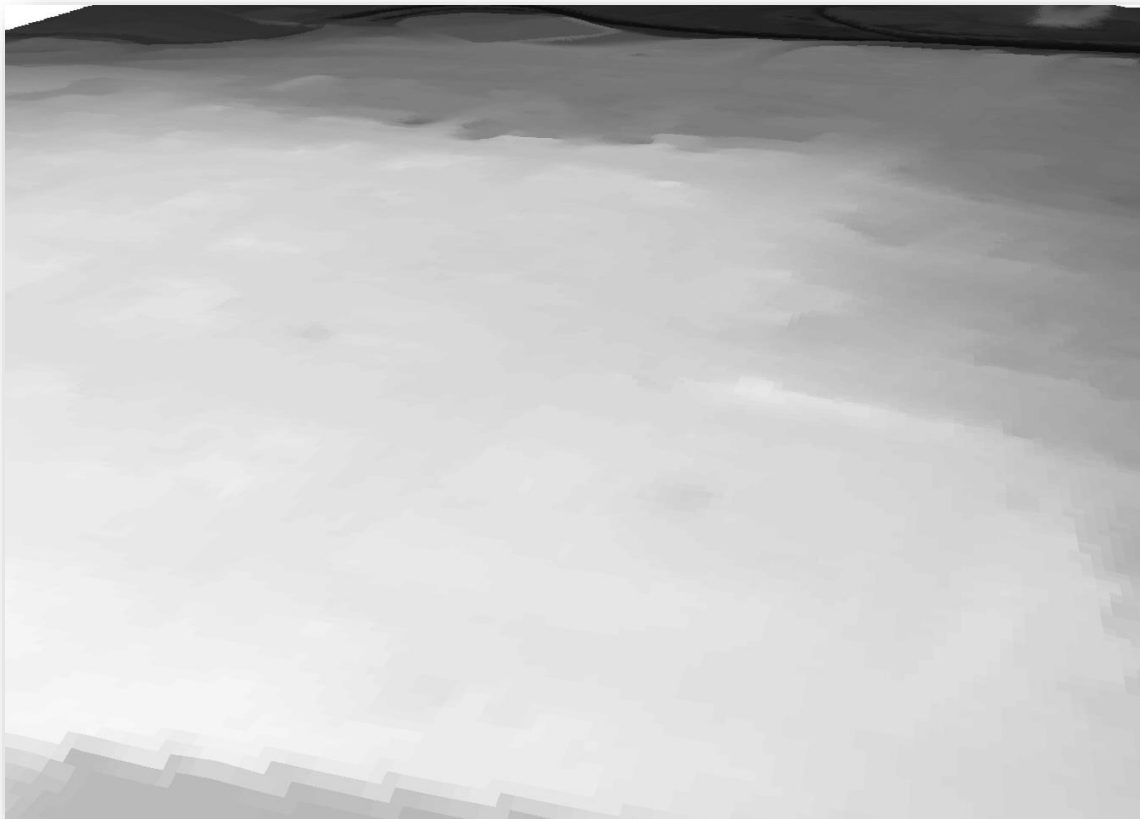
road network with traffic data



long term traffic variations

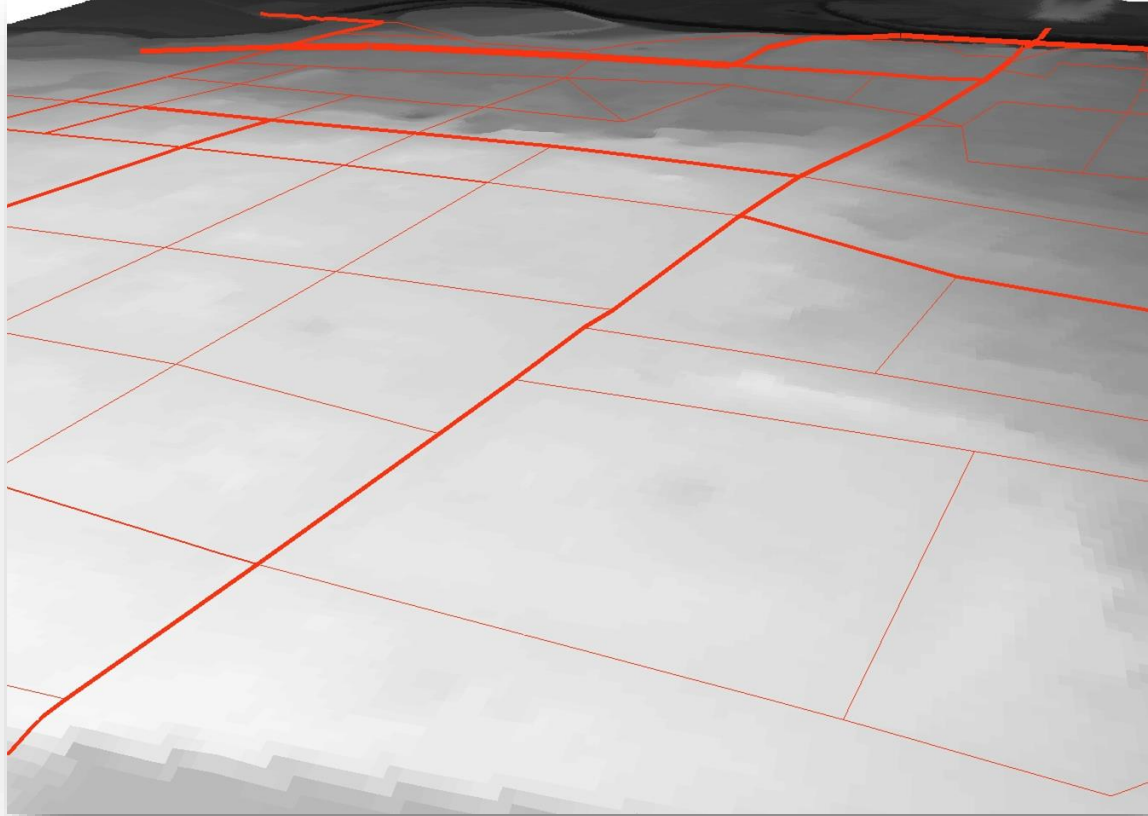
Data and calculation

- terrain model



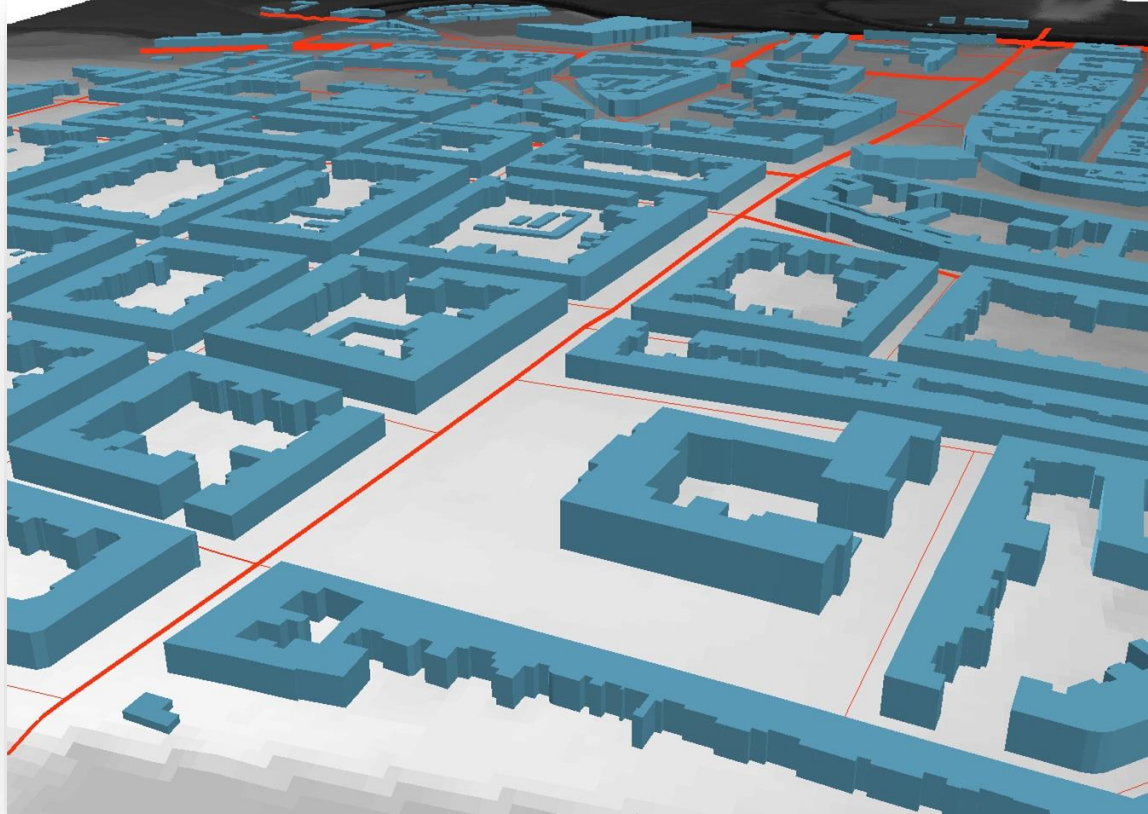
Data and calculation

- terrain model
- **3D geometry of roads**
with traffic information



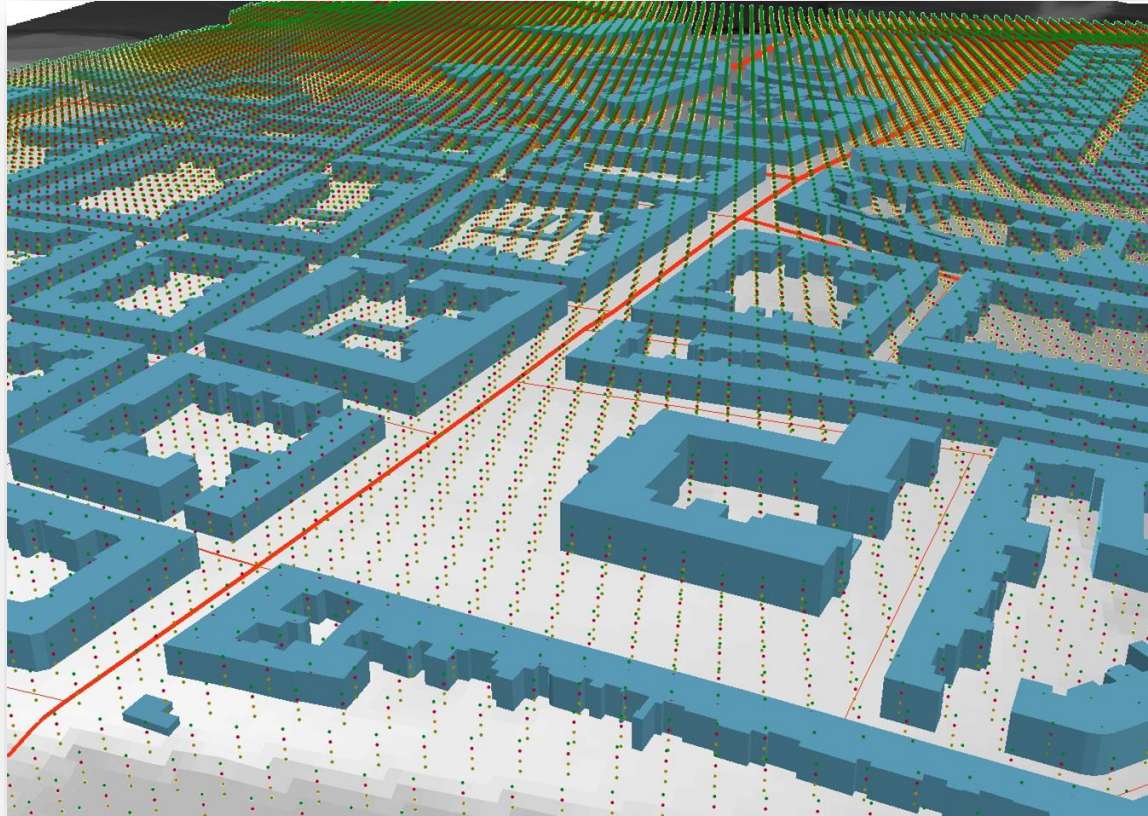
Data and calculation

- terrain model
- 3D geometry of roads with traffic information
- **2.5D building geometry**



Data and calculation

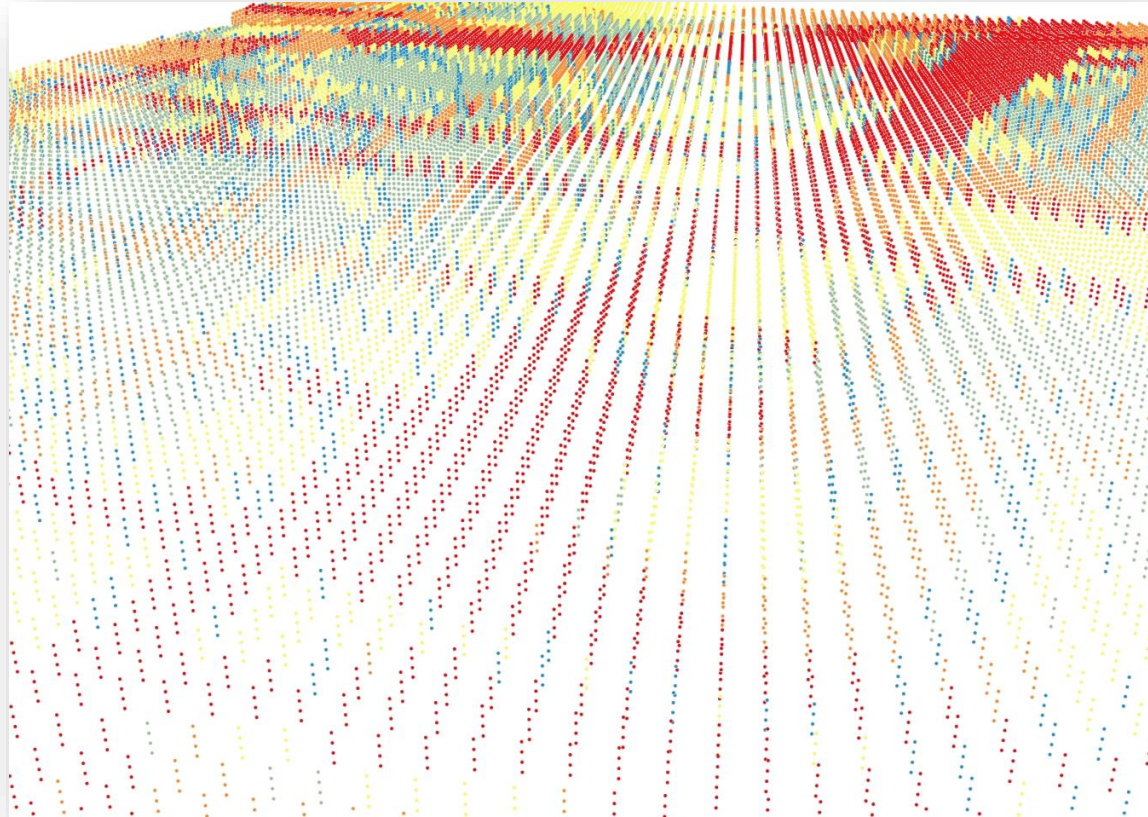
- terrain model
- 3D geometry of roads with traffic information
- 2.5D building geometry
- **grid of virtual microphones**



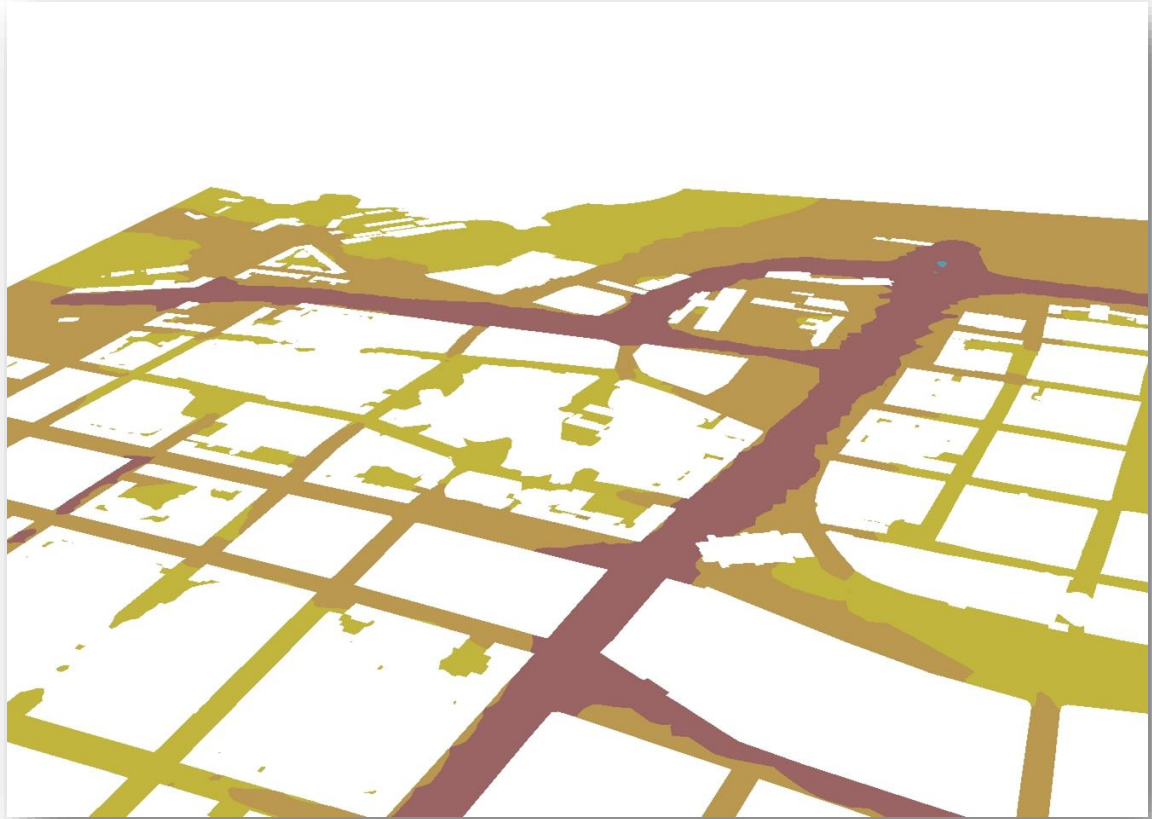
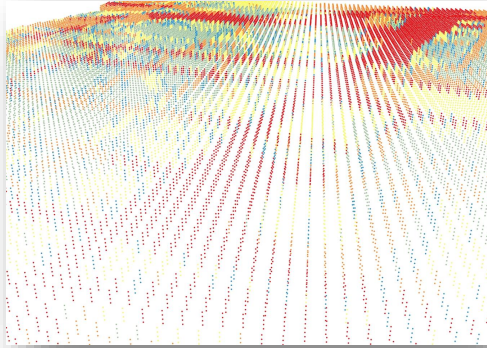
Results of noise modelling

two outputs for different:

- height levels:
 - 4m, 8m, 12m, 16m
above ground level
- time intervals:
 - 06-18h, 18-22h,
22-24h, 00-06h

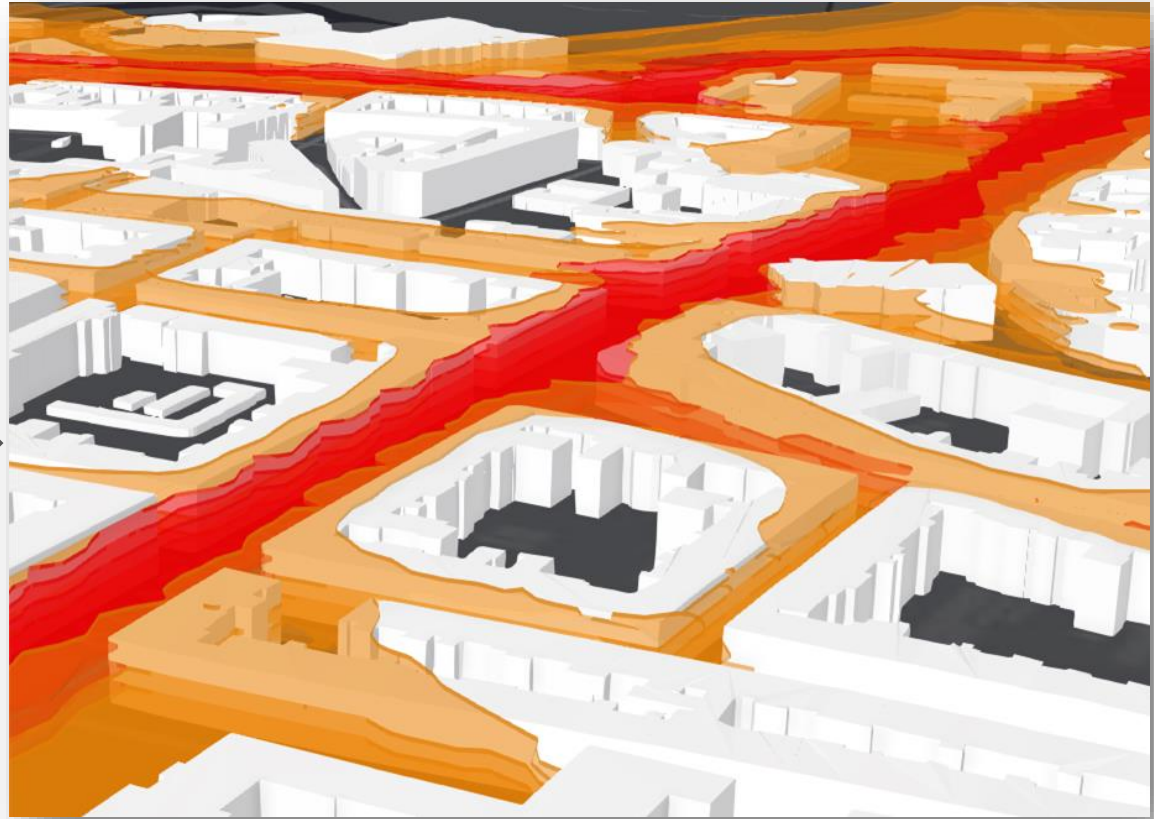
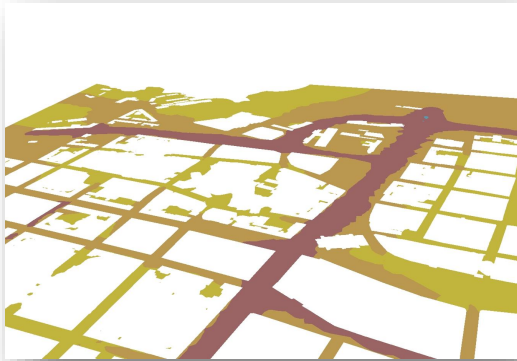


Data processing



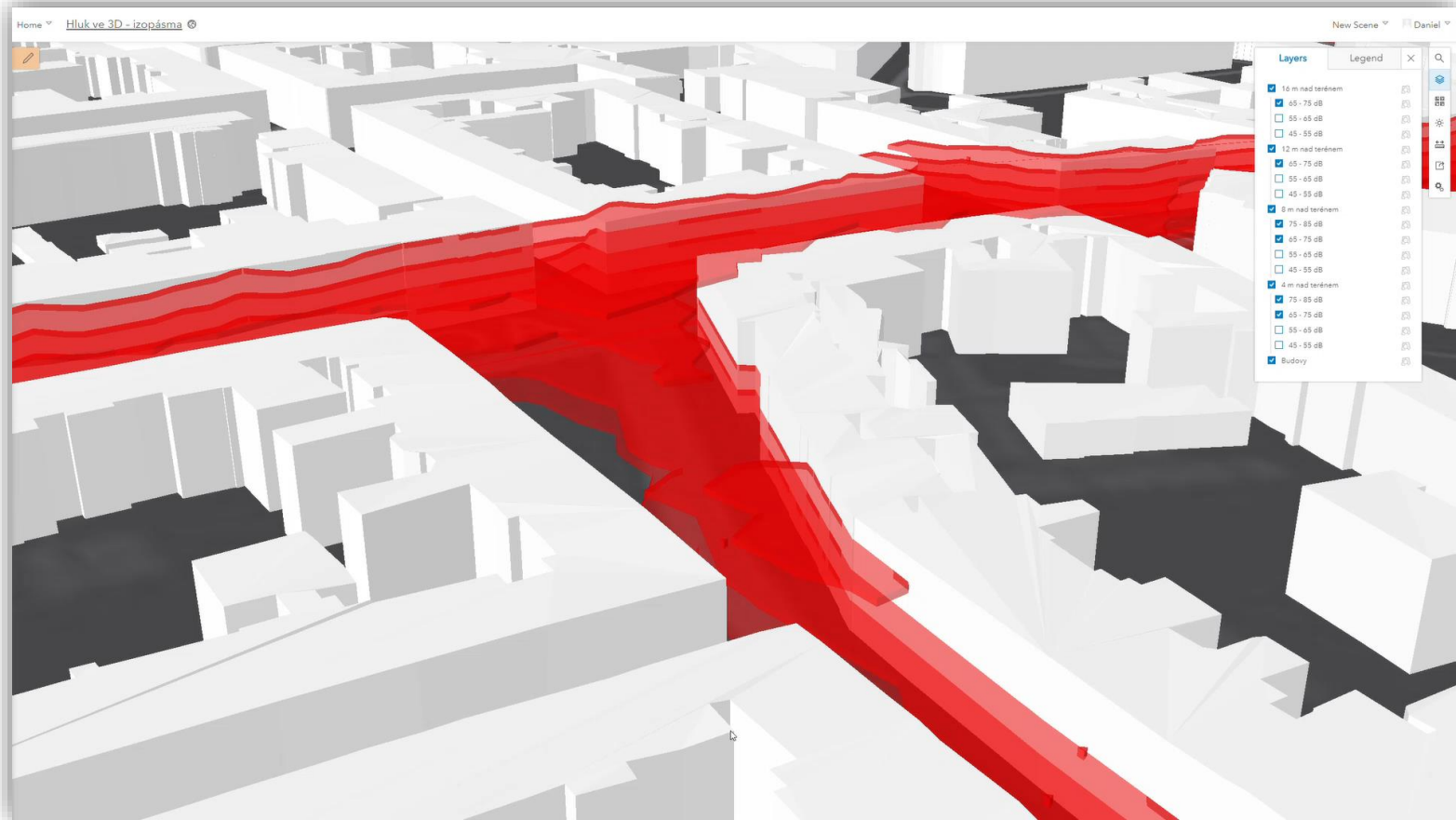
ArcPy

Cartography



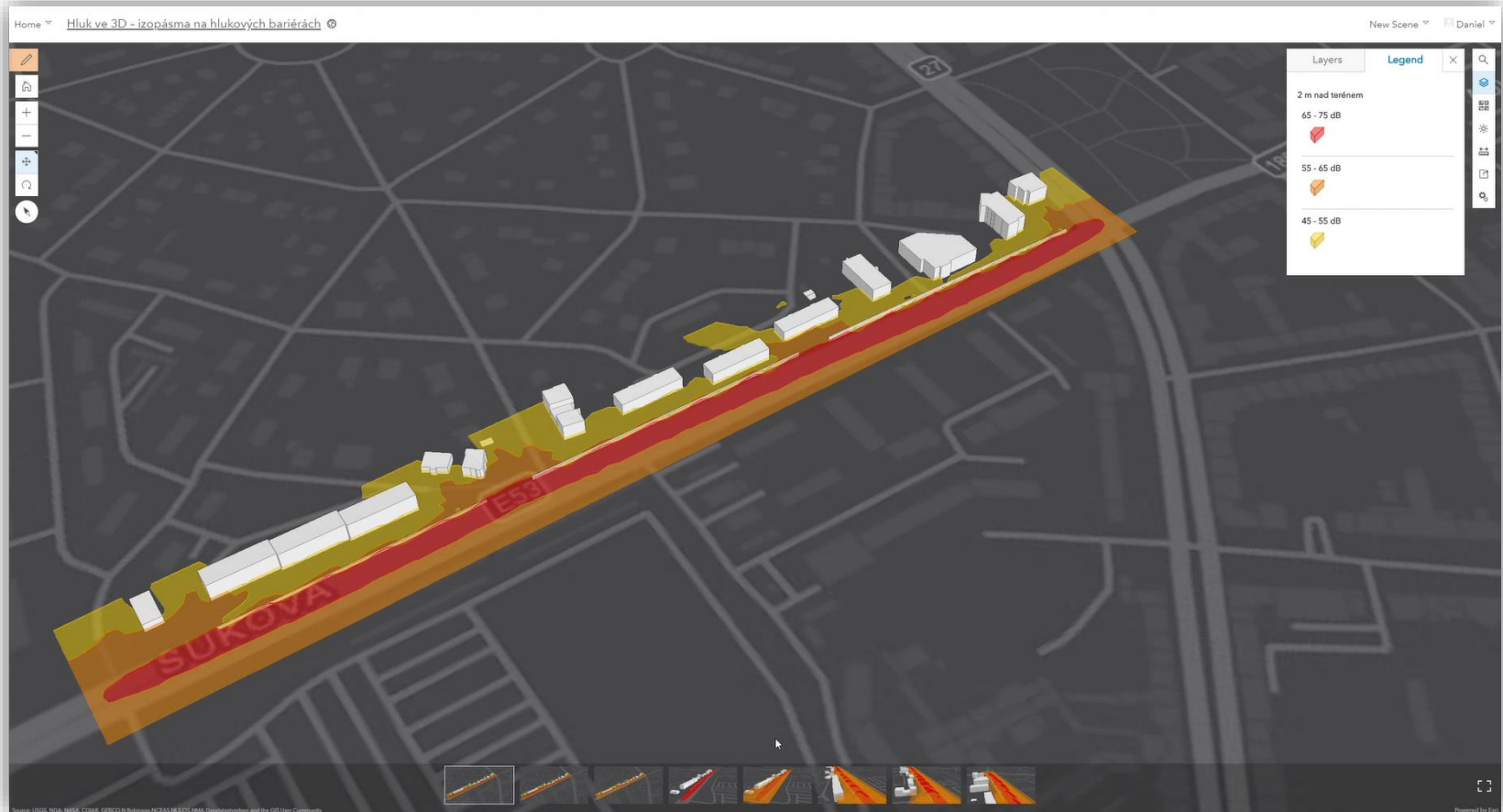
ArcGIS Online

Result: 3D web scenes



Available at <https://goo.gl/xunNta> OR <https://kgm.zcu.cz/aktualni-projekty/3dgis/noise-visualization/>

Result: 3D web scenes



Available at <https://goo.gl/xunNta> OR <https://kgm.zcu.cz/aktualni-projekty/3dgis/noise-visualization/>

Future work – 3D geometry with timestamp attribute

- Cesium



A 3D visualization of a city model with noise contours. The city buildings are represented in light gray. Overlaid on the city are several concentric, irregularly shaped regions in shades of orange and red, indicating different levels of noise intensity. The red regions are the most intense, followed by orange, and then a lighter yellowish-orange. The text "Thank you for your attention" is centered over the image.

Thank you for your attention

http://bit.ly/Noise_in_3D