

# High resolution thermal satellite imaging: Opportunities for new energy and urban heat mitigation applications

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# Department of Geoinformatics – Z\_GIS

platforms & technical solutions → EU framework of Destination Earth

- Building a bridge between fundamental and applied research, test and demonstrate
- Showcase the true integration of EO, in-situ data, social data, crowd-sourced information including vague information
- develop demonstrators and educational projects
- Contribute to teaching, graduate training and expert exchange programs with an “education through research” approach
- Foster spin-off and startup activities



# Gamechanger spatial resolution of thermal images

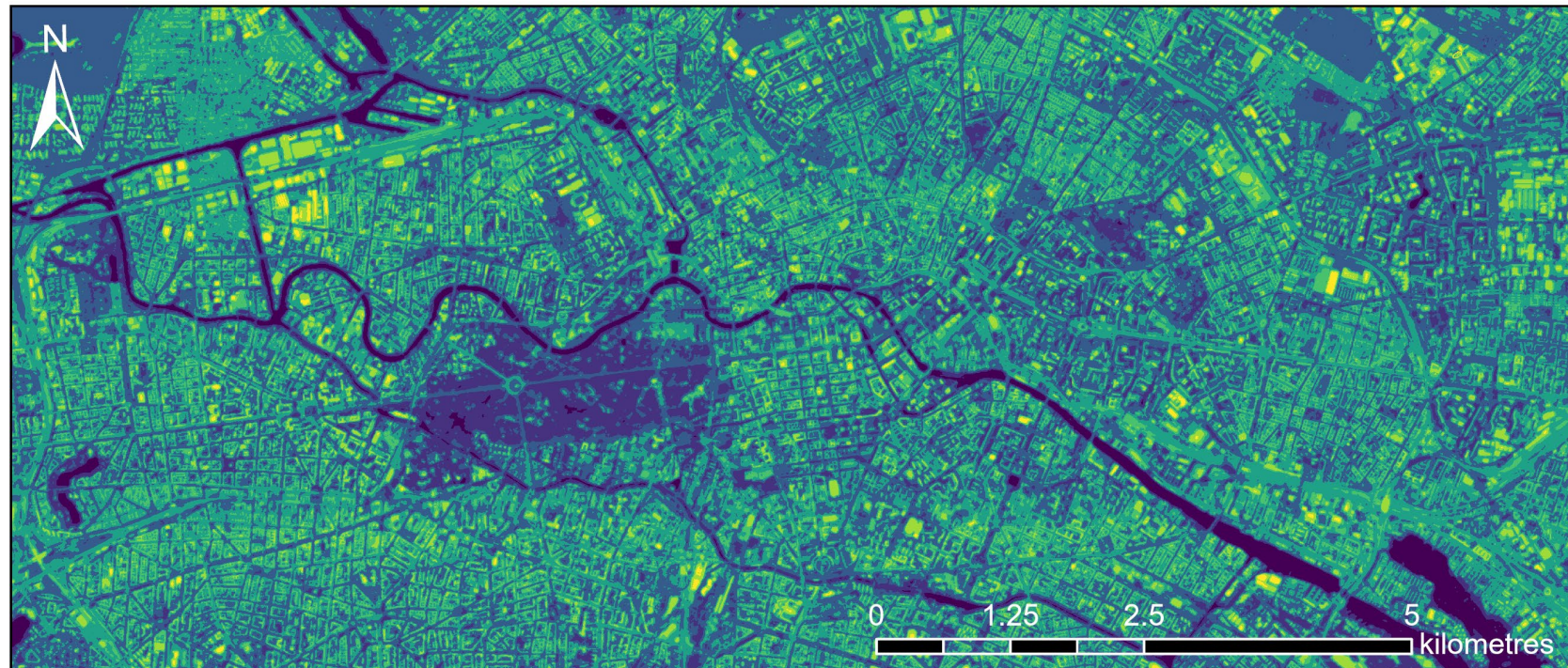
Just starting ....  
like high-res optical 2001-2004



# „high-resolution thermal imagery“

Enables hyperlocal thermal mapping, focus today:

- Urban heat / cooling
- New energy applications



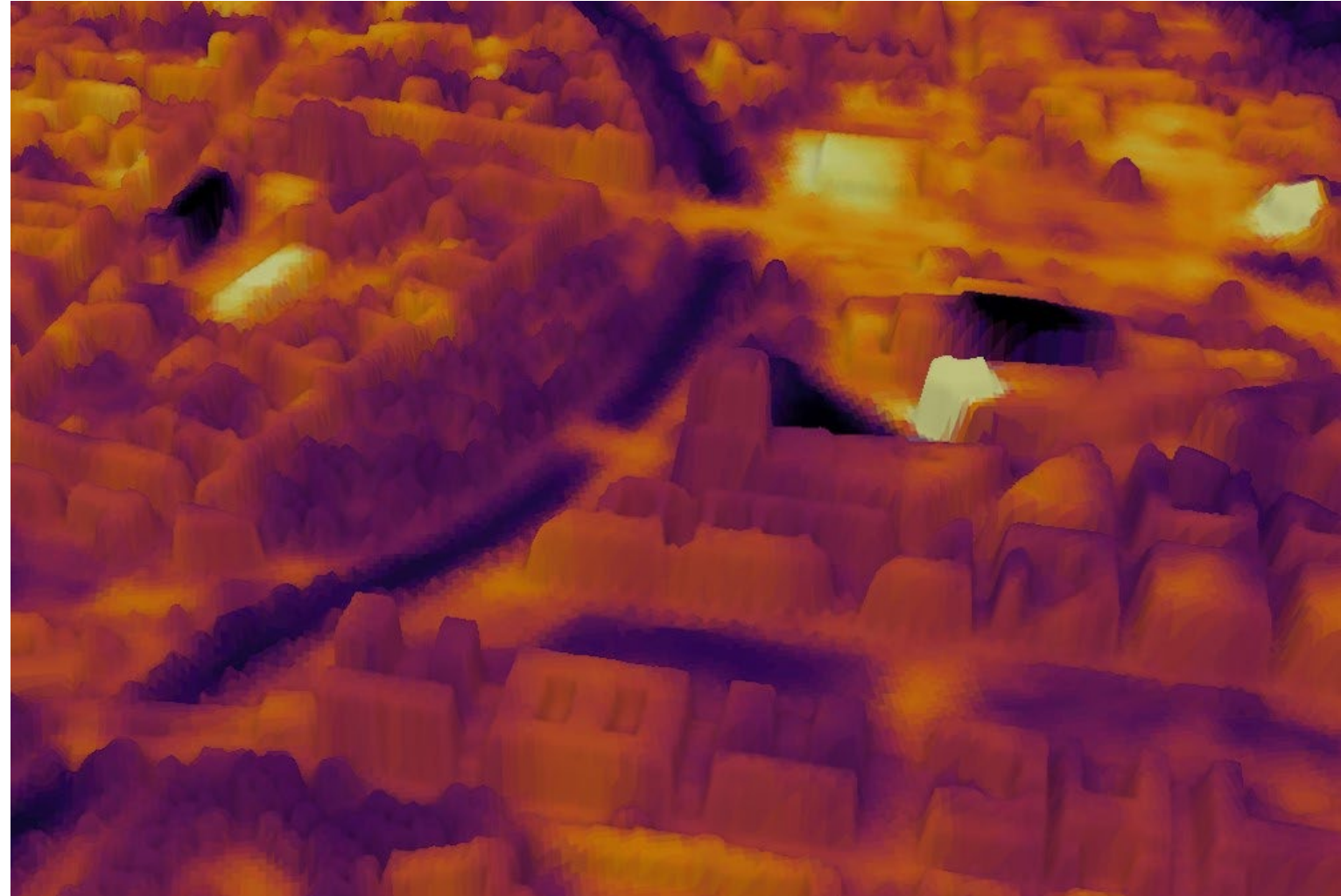
# High-res thermal & geoAI

Main progress:

- feature recognition
- classification
- enhancement of data
- Integrate sat | airborne | UAV
- integrate big data into forecasting applications

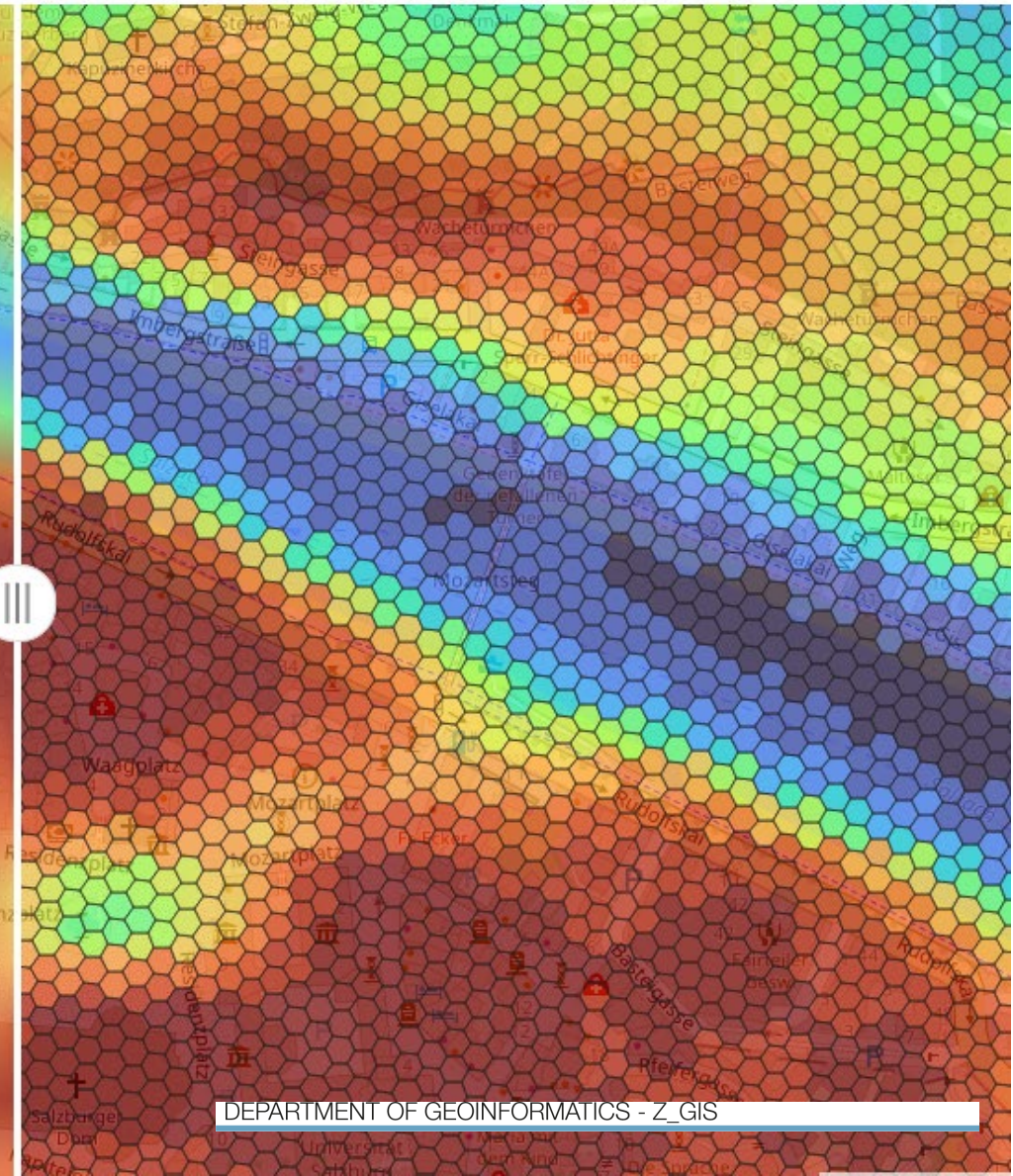
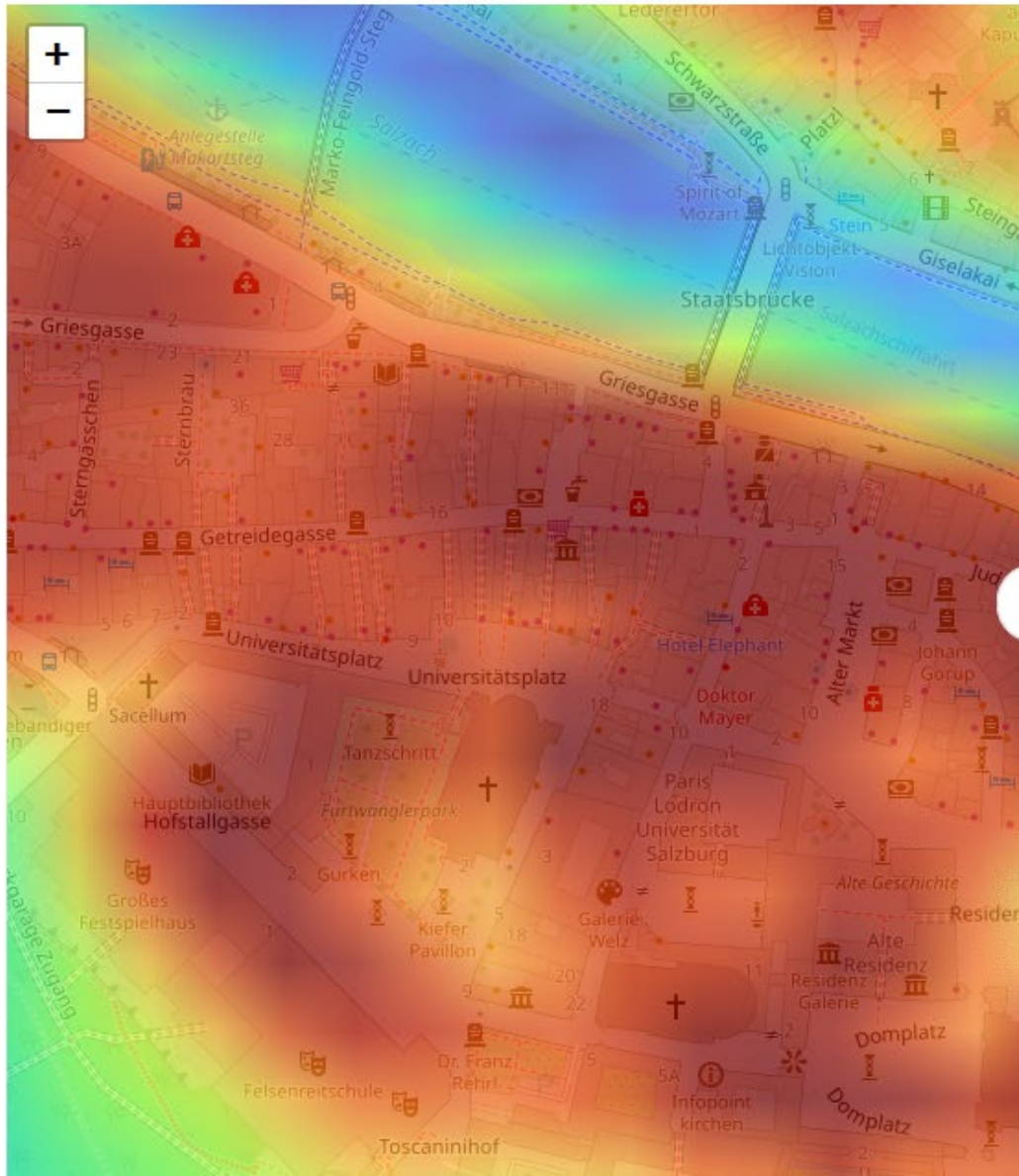
Challenges:

- diverse temporal resolution
- biases in data



# The urban heat observatory

[www.termatics.com](http://www.termatics.com)



# Need for academic EO science education

New insights through integrative approaches

Influences science methods

Identify relevant insights

<https://master-cde.eu/>

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# Conclusions

High-res thermal data will increasingly be used for combating climate change, urban heat islands and will support new types of applications in the energy sector.

In the next few years, we will experience a great boom at all levels in the space industry.

For this to happen, we have to educate a whole generation of scientists.

