

# Satellite-based Services for Disaster Risk Management

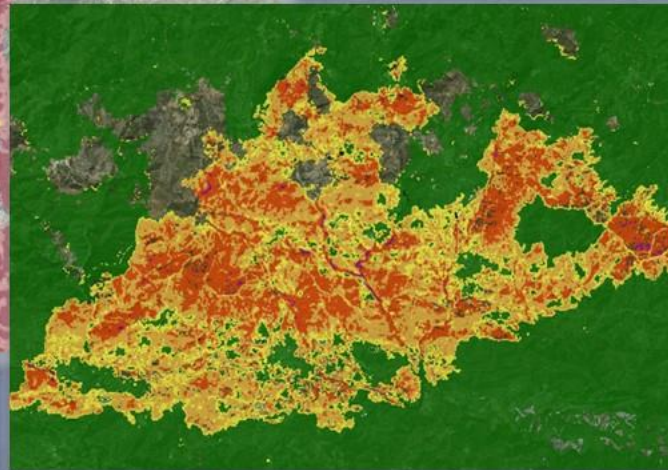
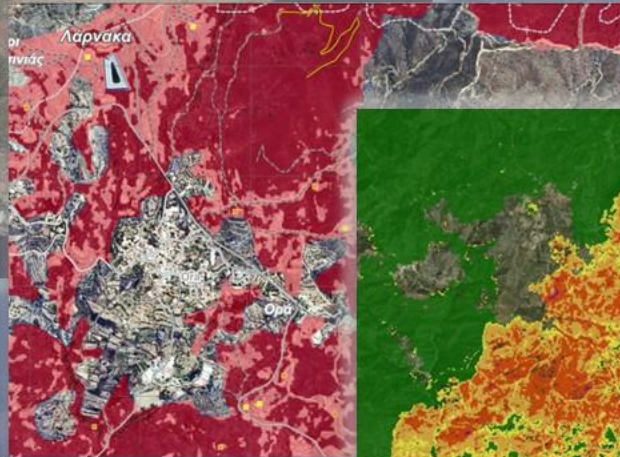
17th May 2023

9:30 - 15:30 EEST

HILTON NICOSIA

*Achaion 1, Egkomi*

Nicosia, Cyprus



In cooperation with the Department of Electronic Communications |  
Deputy Ministry of Research, Innovation and Digital Policy



# ADDRESSING THE IMPACT OF CLIMATE CHANGE ON INFRASTRUCTURE USING SPACE TECHNOLOGY

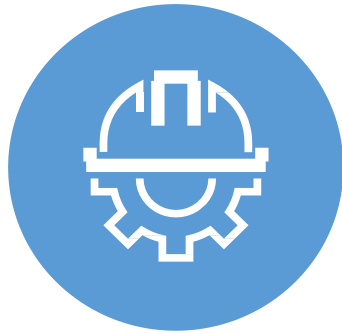
Dr Skevi Perdikou  
Technology Manager

# Contents

- ***The ‘Great Infrastructure Challenge’***
- ***Case studies of monitoring infrastructure and the effects of climate change***
- ***AI for infrastructure susceptibility to geohazards***
  - Climate change
  - Reduction of carbon footprint

# Who we are

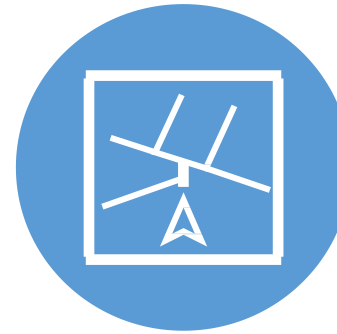
- Established in 2007
- Services:



Geotechnical  
engineering



Satellite  
Remote Sensing



GIS



# The Great Infrastructure Challenge

Ageing



Heavier use




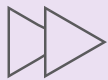





Climate change



Declining budgets



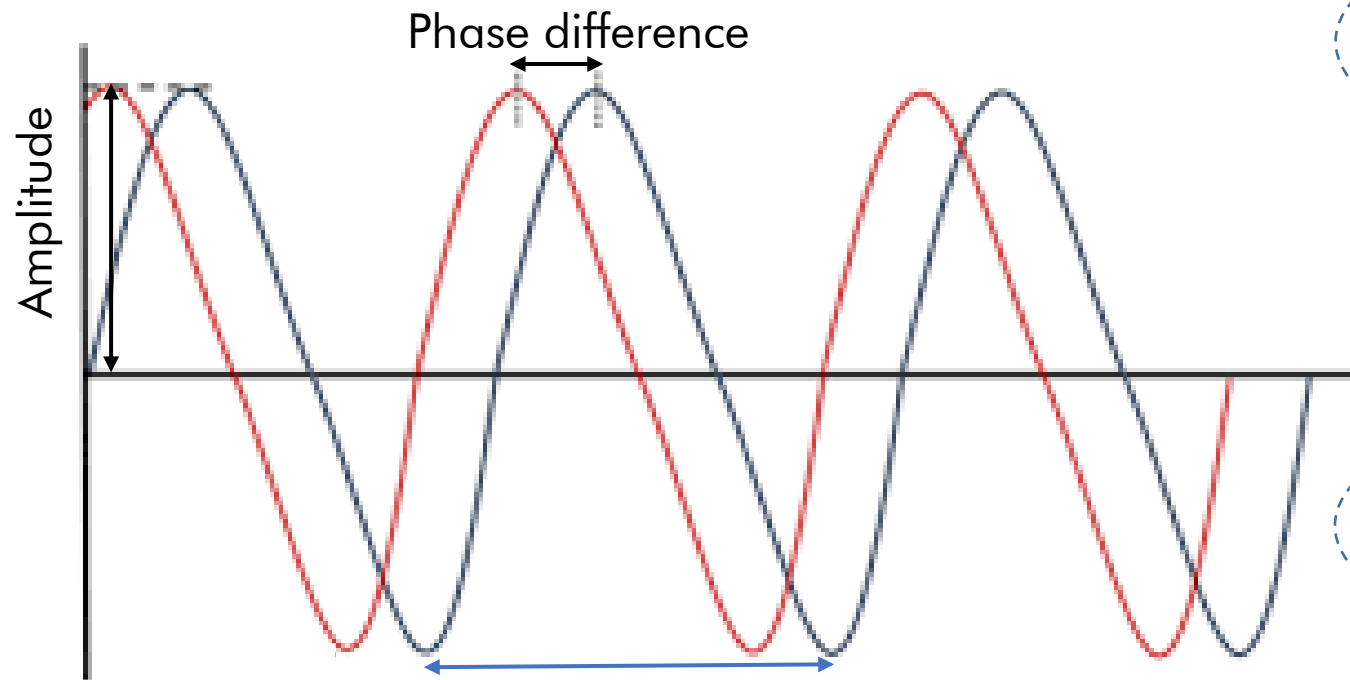
# Infrastructure resilience by satellite

	<b>Cheaper</b>
	<b>Faster</b>
	<b>More accurate</b>
	<b>High frequency</b>
	<b>Non-disruptive</b>
	<b>Automated</b>
	<b>Retrospective</b>





# SAR wave



**Amplitude:** Soil moisture measurement

**Phase:** Displacement measurement

**Monitor the condition of infrastructure**

# Applications

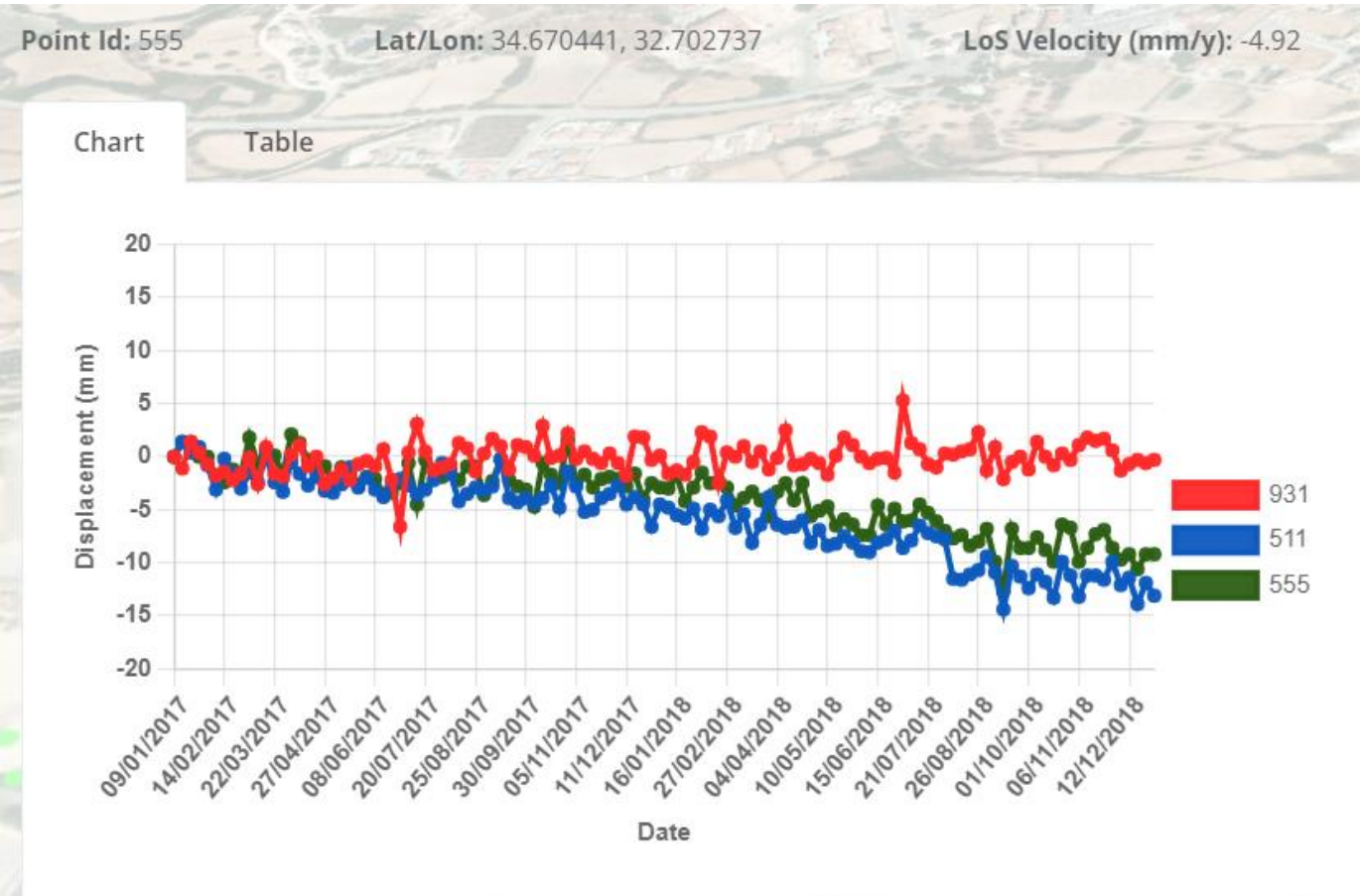




Alexandris et. al., 2016)



# Centre of village landslide, Pissouri





# Limnes landslide, Pissouri





## Horizontal displacement: March 2016 to March 2018

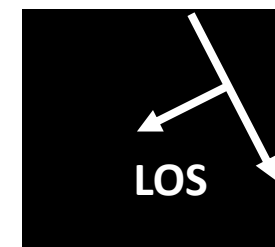
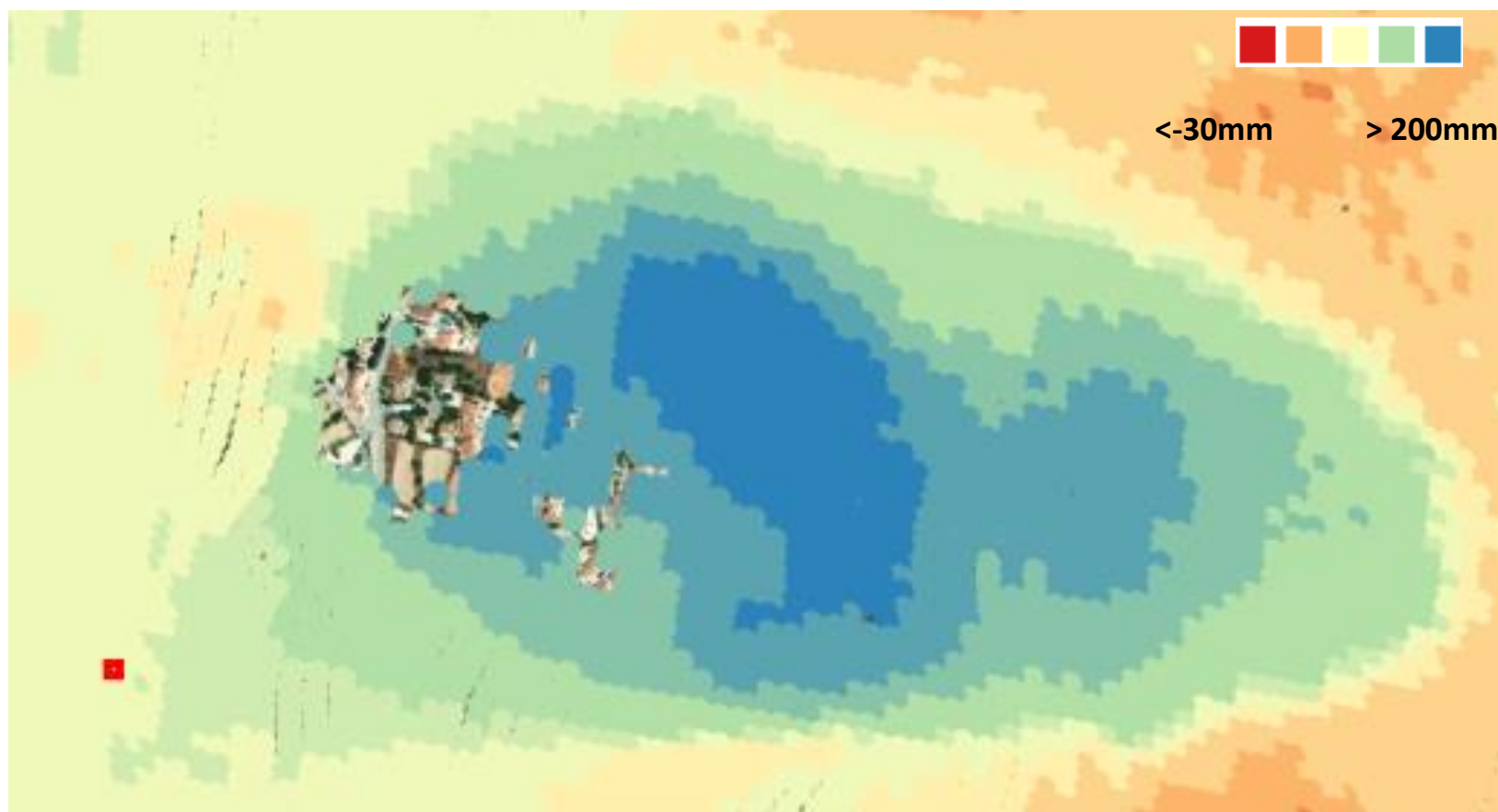


  
<-19mm      >190mm

Faster rate of movement is confined to the central portion of the slope' Hearn, et. al., 2018.

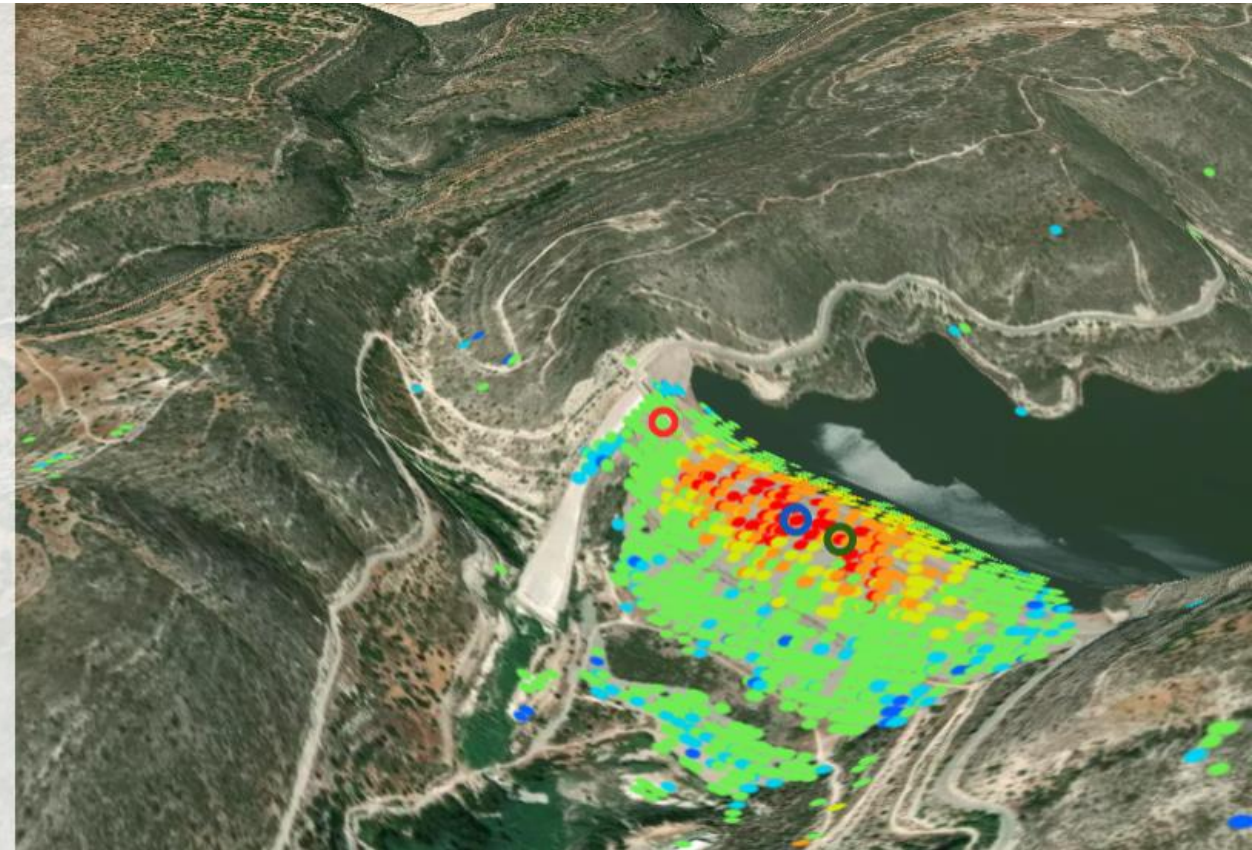
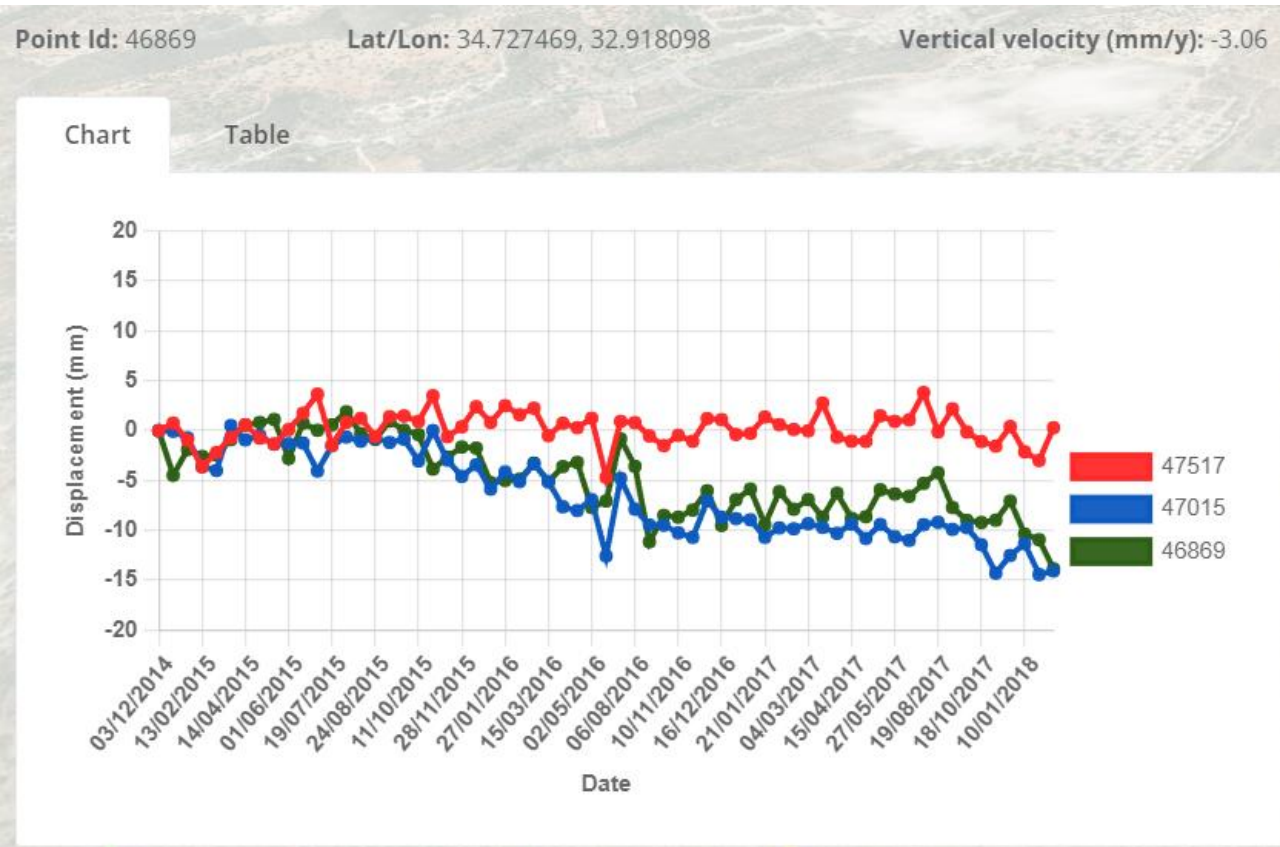


# LOS displacements: June 2017 to December 2019

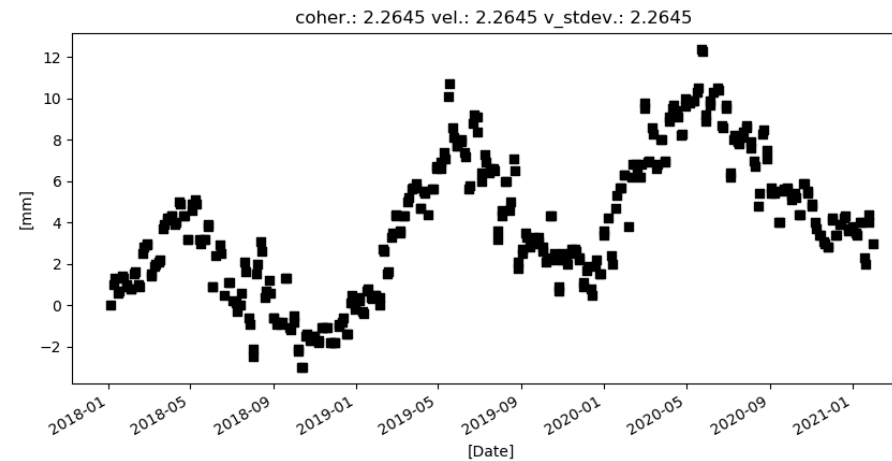
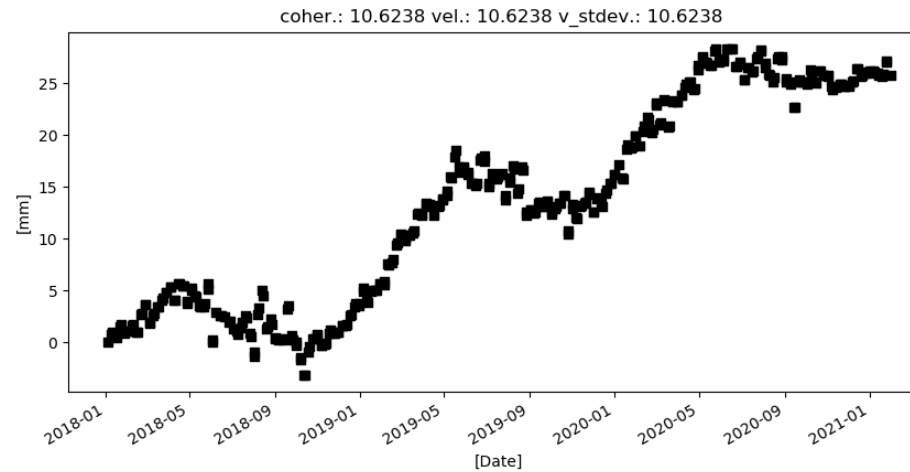


Faster rate of movement is confined to the central portion of the slope' Hearn, et. al., 2018.

# Kourris dam, Cyprus

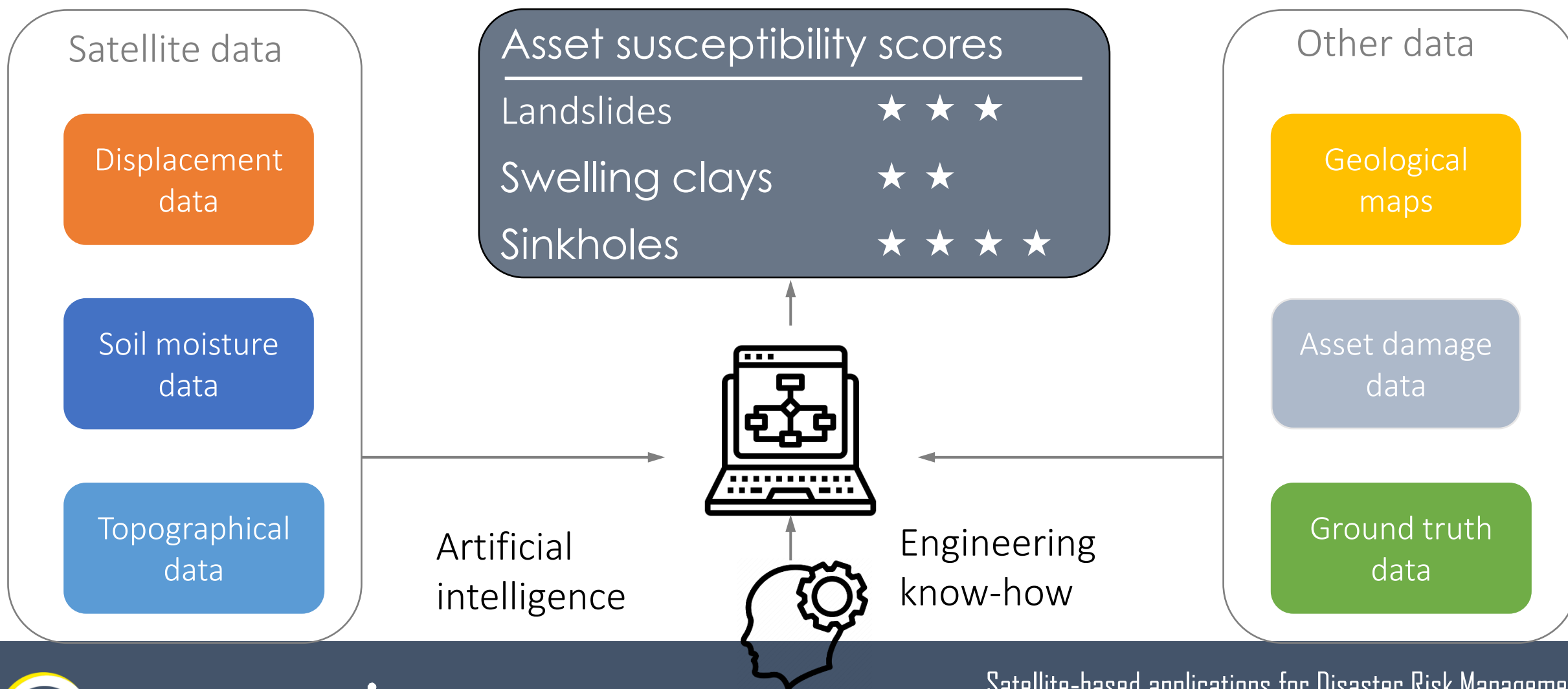


# Aglangia high school, Nicosia

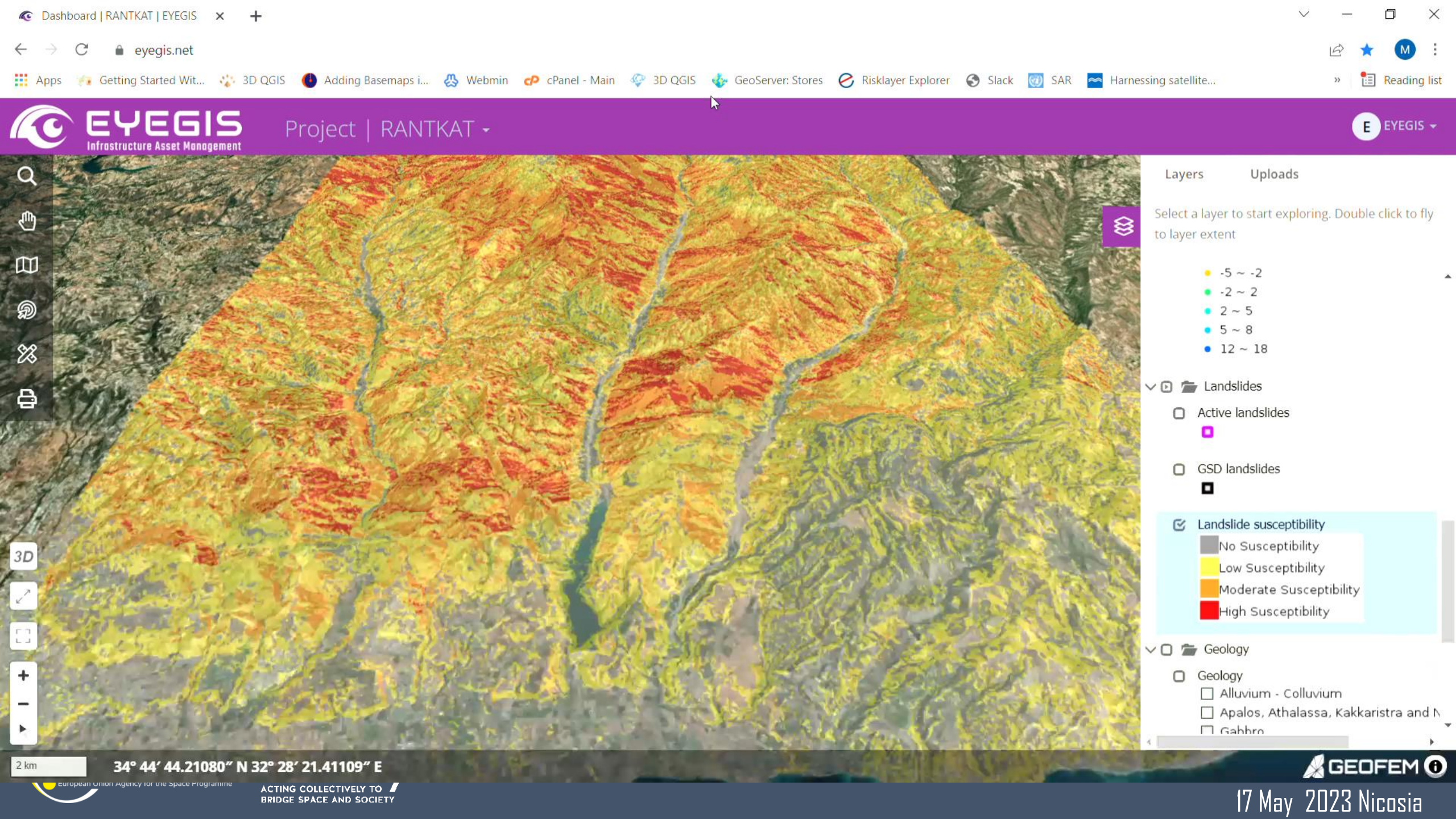




# Satellite data with engineering insight

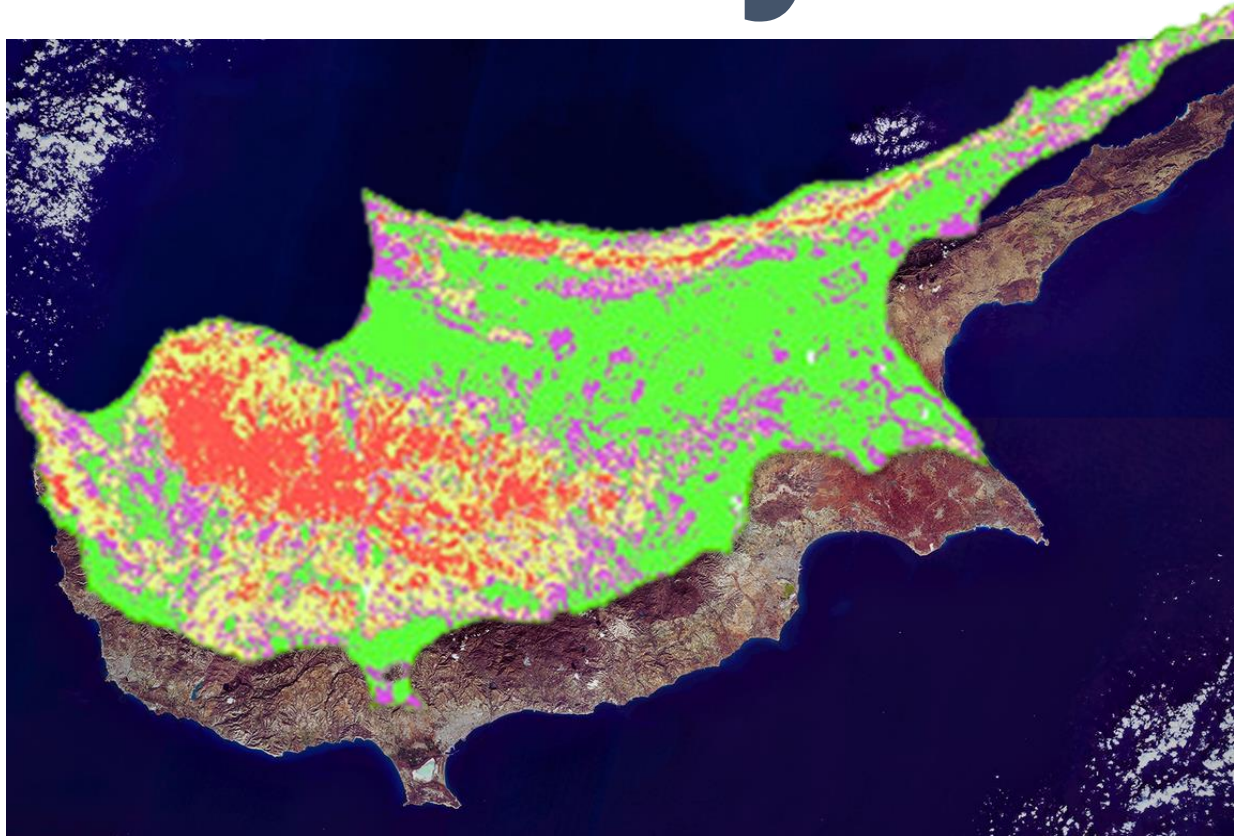








# Thank you!



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