

# Preparation for the ICGIS Conference

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# CGIS 2022: 16. International Conference on Geographic Information Systems

October 06-07, 2022 in Beijing, China

## My Paper Submissions

<b>Conference:</b> <a href="#">Geographic Information Systems, October 2022 in Beijing</a>
<b>Submission Date:</b> Jun 01, 2022 12:38
<b>Submission Status:</b> Qualified-Abstract
<b>Title:</b> <a href="#">Data Integration with Geographic Information System Tools for Rural Environmental Monitoring</a>
<b>Paper Code:</b> 22CN100063
<b>Presentation Type:</b> Oral
<a href="#">Source</a> <a href="#">PDF</a> <a href="#">Acceptance Letter</a>
<a href="#">Reviewer Comments (1)</a> <a href="#">Revised/Final Paper</a> <a href="#">Blind Paper</a> <a href="#">Copyright</a> <a href="#">Presentation</a>

# Author Registrations

Conference: [Geographic Information Systems, October 2022 in Beijing](#)

Registration Date: Jun 29, 2022 09:52

Registration Status: **Approved** 

Registration Type: Author

Selected Plan: Non-Student Oral/Poster Presenter Registration

Payment Type: Bank Transfer

Amount: € 450.00

Papers: 22CN100063

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# Data Integration with Geographic Information System Tools for Rural Environmental Monitoring

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## Conference

Geographic Information Systems, October 06-07, 2022 - China, Beijing

## Paper Code

22CN100063

## Status

Qualified-Abstract

## Authors

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## Keywords

remote sensing, GIS, metadata, integration, environmental analysis

## Paper Type

Abstract Submission

## Presentation Type

Oral

## Abstract

The paper deals with the conditions and circumstances of the integration of remotely sensed data for rural environmental monitoring purposes. The main task is to make decisions during the integration process when we have data sources with different resolutions, locations, spectral channels and dimensions. In order to have exact knowledge about the integration and data fusion possibilities, it is necessary to know the properties (metadata) that characterize the data. The paper explains the joining of these data sources using their attribute data through a sample project. The resulted product will be used for rural environmental analysis.

## Objectives

Give an overview about the aspects of data integration in GIS where the data sources are different in resolution, covered area, time, spectral channels dimension. Demonstrate the data integration process using remote sensing data.

## Methodologies

The evaluation process includes pre-processing of images, resampling and data integration for visualization, thematic mapping (classification) and numerical (area) calculations for rural environmental monitoring.

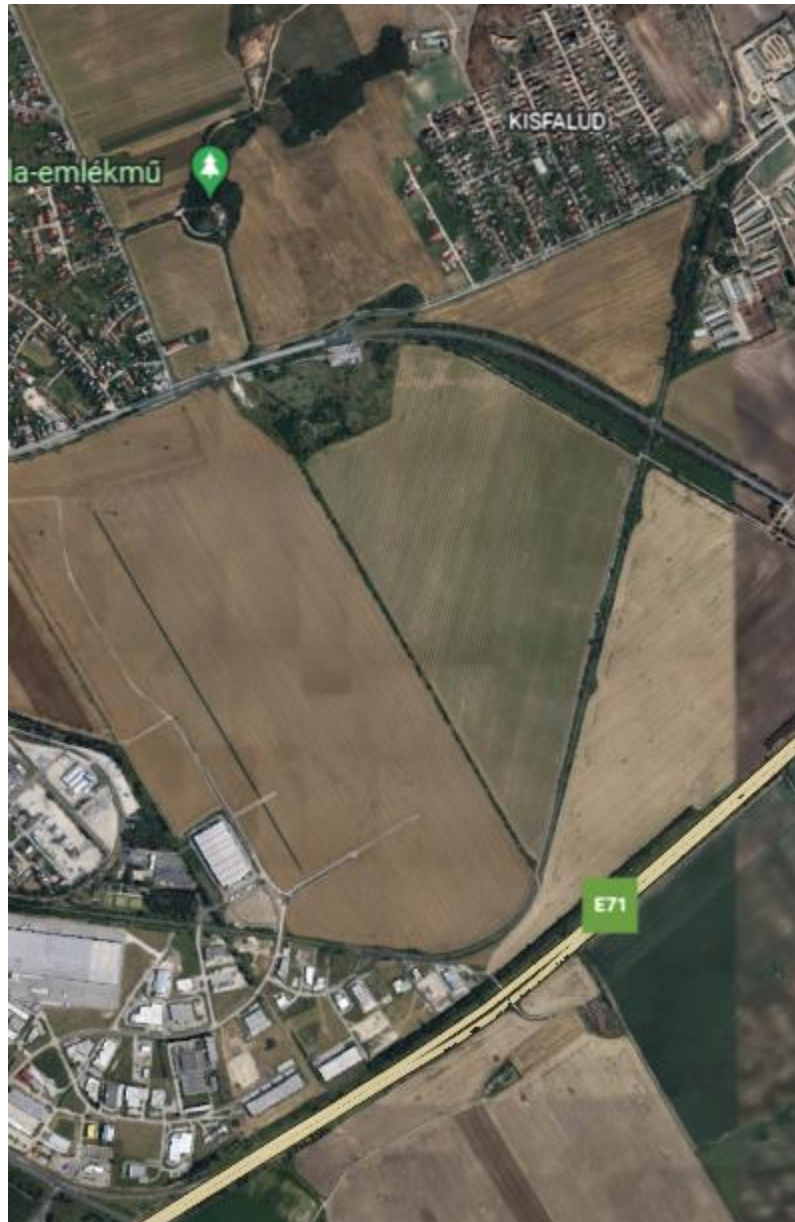
## Contributions

Describe a methodology for combining data of different resolutions and sources. Carrying out a complex environmental study in a rural environment based on sample data. Demonstration of the possibilities of the software used for processing.



# 2013 Research Area 2022

47° 12' 30" N  
18° 28' 30" E



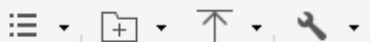
47° 10' 45" N  
18° 30' 00" E



Short explanation	Short name	Resolution	Formats	Remark
UAV mission images, orthophoto and DSM	UAV	5 cm	GEOTIFF	Year 2022
Google Map images	GOOGLE	0.5 m	GEOTIFF	Year 2022,
DDM from contour lines and SRTM	DDM	20 m	SURFER, ASCII	Original resolution is 20m, 1m GRID is interpolated
Orthophoto	ORTHO_PHOTO	0.5m	GEOTIFF	Channels: RGB
Topographic map	TOPOMAP	1m	ENVI, GEOTIFF	Map sheet No.:54-411
WorlView-2 image	WV2	MS 2m, Pan 0.5	ENVI, IDRISI	Number of channels: 8 MS (400-1040nm), 1 Pan (450-800nm)
Hyper-spectral images	HYPER	1m	ENVI	No. of channels:253, 401.49 - 1000.24 nm



## FileStation 5



TET\_4 &gt; Data



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<input type="checkbox"/>	ORTHOPHOTO	2022/06/09 09:28:55	Mappa		
<input type="checkbox"/>	HYPERSPECTRAL	2022/06/09 09:27:57	Mappa		
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<input type="checkbox"/>	LANDSAT	2022/04/20 16:09:10	Mappa		
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<input type="checkbox"/>	AERIAL IMAGES	2022/04/01 10:04:39	Mappa		
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<input type="checkbox"/>	WORLDVIEW-2	2022/03/22 10:12:35	Mappa		
<input type="checkbox"/>	TOPOGRAPHIC MAP	2022/03/22 10:12:19	Mappa		

# 1st Milestone - tasks and goals

- ▶ 1. Data collection from remote sensing, attribute data and existing maps:
  - a) WorldView II, RADSARSAT-2, Landsat, Lidar 3D point cloud data and Sunflower 8 satellite data from the demonstration;
  - b) GIS spatial information data(included large scale land use classification map ) from the demonstration;
  - c) Crop Phenology data in the demonstration area;
  - d) Soil texture data in the demonstration area.
- ▶ 2. Studying of rural eco-environmental products using quantitative inversion and validation techniques. Available datasets are: Relevant Chinese satellite image data, basic elements of agricultural environment such as land use, topography and other series of professional maps and background data.
- ▶ 3. Making of vegetation index maps using Chinese and Hungarian satellite images.