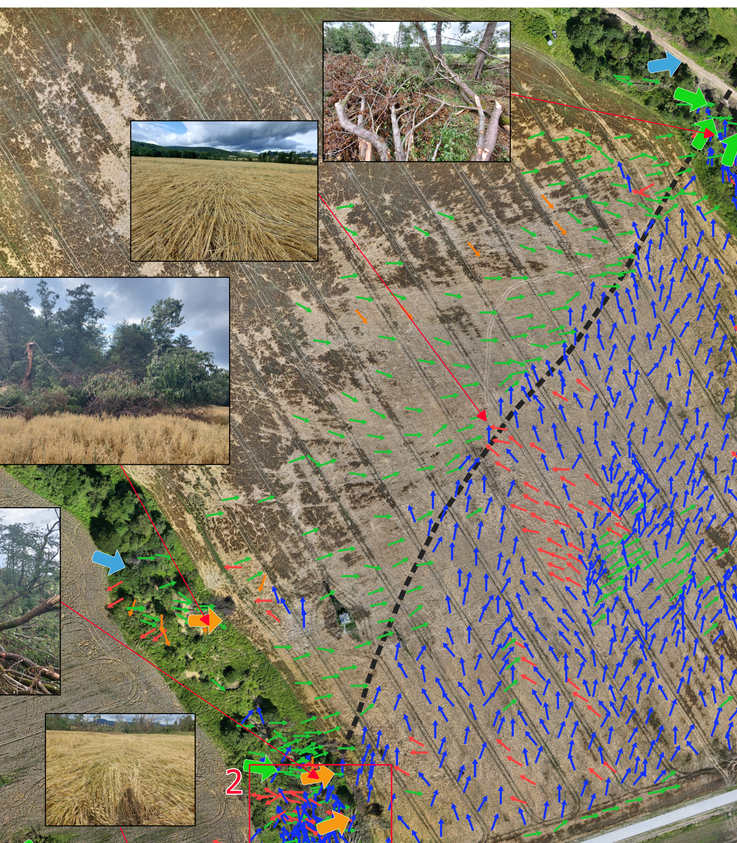
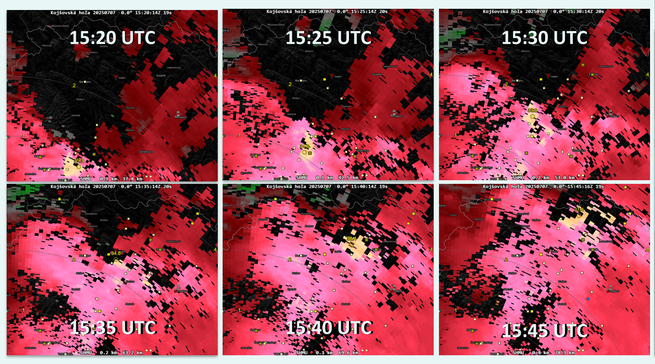
DAMAGE ASSESSMENT OF SEVERE WIND EVENTS USING FIELD MAPPING AND REMOTE SENSING
A case study of the Hažlín tornado, Slovakia

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WEATHER ANALYSIS

- High CAPE / shear environment
- Widespread initiation on frontal wave
- Supercells, later merged into QLCS with embedded bow echo
- Mesovortex observed - strongest severe wind swath, tornado formation



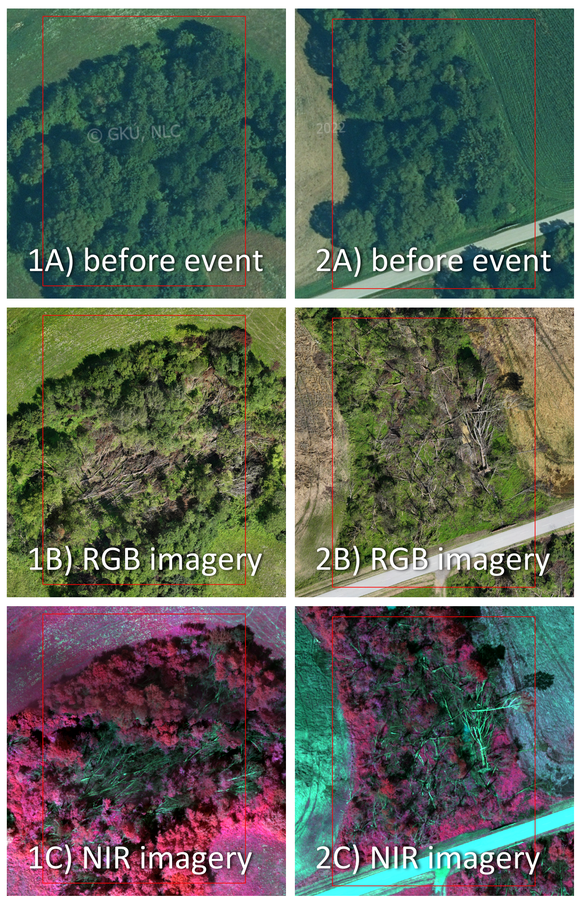


METHODS

- Field mapping of the wind damage using mobile devices (georeferenced imagery, damage rating, orientation of the damage)
- Remote sensing methods using UAV high-resolution multispectral imagery
- GIS postprocessing for geospatial analysis of the event

DAMAGE SURVEY IN DETAIL

Date/time: 7th July 2025 15:32-15:37 UTC
Highest damage intensity: IF2
Impacts: Trees/fields (no fatalities!)
Path length: 1100 meters
Max path width: 350 meters
Min path width: 50 meters



Interactive map

Scan QR code

How to use

- Click on “layers” icon in right corner to browse the data
- Select the desired layers from the menu
- Click on large arrows inside the map to view the damage rating and images

KEY RESULTS & CONCLUSIONS

- Mobile application - quick and systematic solution for gathering the data from large areas
- Remote sensing - identification of convergence patterns and coverage of inaccessible areas
- Open grassy areas still difficult for interpretation (no damage, only debris aloft by tornado)
- Consistency of damage with new IF scale (e.g. trees category damage, difference between tree strength within tree stand)

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