



## **The traces of past agricultural practices in hilly regions of the Czech Republic**

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Agricultural landforms in montane landscapes, such as stone walls, mounds or heaps, and terraces, document ability of local inhabitants to conduct sustainable farming in unfavourable locations in the past all over the world. The regular spatial arrangement of particular landscape patches of different usage in hilly regions of the Czech Republic is called “pluzinas”. Due to intensive agriculture, pluzinas were often destroyed during the 20th century. Pluzina landscapes have been preserved mainly locally in regions not suitable for modern agriculture technology, with obstacles such as in too high altitudes, too steep slopes, military activity. Another reason for preserving the pluzinas was expulsion of Germans after the World War II, resulting in presence of abandoned villages in border regions. The documentation of the extent of the pluzina remainders has been facilitated considerably in the last two decades by advances in GIS methodologies.

The motivation for our research is our interest in resilience of the pluzinas and some consequences of their existence in the present time. We also intend to document their anti-erosive performance and stability after their abandonment by the analysis of current surface topography. For our study we used historical maps, aerial photographs and digital terrain models created from laser scanning data. The presented poster will show preliminary results of ongoing research.

In study areas in Northern and Southern Bohemia specific field works and various analyses were made. In north and north-west Bohemia (Krusné Hory Mts. and České Středohoří Mts.), we examined local plant cover, which showed preservation of meadow species even after re-forestation of the former pluzinas. Using GIS tools, we also analysed factors, which could influence decision on pluzina landscapes destruction due to modern agricultural practices or their preservation, in connection to demographic factors, average field slopes and land-use changes in the 20th century.

In the southern Bohemia, in the foothills of the Šumava Mts., we analysed abandoned village which was established in High Mediaeval times. We used not only GIS tools but we also performed imaging of the wall structures by geophysical means (electrical resistivity tomography, ERT). The stone walls situated more-or-less perpendicularly to the slope gradient with mean overall slope higher than 10 ° resulted in nearly terrace-like surface topography in some places. Some walls are higher and wider than 1 m and their upper edge is buried by topsoil washed from upper parts.