Introduction

Area of interest: catchment of the Losenice R. - located in southwestern Bohemia in Sumava Mts - altitude 550 - 1250 m a.s.l. - catchment area 54.4 km²

Goals and Methods

- research is aimed at estimating possible endgame of the archaeological site - understanding the relief past and current development - chief investigation methods: geomorphological mapping structural measurements dilatometric monitoring GIS-assisted analyses - cooperation with archaeologists, geophysicists, technicians, engineering geologists, geologists...

Archaeology

- remnants of oval fortifications 5 km as. from Kaperske Hory - research carried out since 2002 - remarkable research since 1999 of 20Century (Šepekova, Koperské, Slamka) - traces of spurs on valley (visibility 7) - unclear function of the site (religious, road or religious centre) - built between fifth – first century B.C. - altitude 300 - 391 m a.s.l. - fortifications up to height 5 m - many local legends - collaboration of a geologist, archaeologist, detailed GPS mapping of the site, transversal profiles of the walls, incidence of the entrance

Geomorphology

Mapping

- GPS assisted geomorphological mapping - generally 1:10 000 - GPS - improving exactness - documentation points

Geomorphic interpretation map = first step towards synthetic genetic map

Landslides

- conditions of sliding under Obrí Hrad - significant factors: description of depth of 25 m (according to geophysical measurements) - boundary of the valley - distribution of gneisses - boundary of the area

Sediments

- 3 main interest - complex record of the Boden sediments (in particular after 2002 floods) - study of the derived coarse in particular numerous black beds resulted from the flood. From the morphological records it is obvious that the sedimentation remains (possibly connected with the landslide) - mainly carries for the usage by coarse (clay)

Valley profiles

- longitudinal profiles: identification of initiation anomalies - transversal profile: input for slope development analysis and comparison with structural parameters (inclination)

Extreme events

August 2002: severe long-term rain has whole Sumava Mts. - Losenice R. - Established discharge 150 m³/s (average 0.7 m³/s) - serious damage on both sides of Losenice R. - Mark observation (2003-2005) and remapping of their change after 2 years (2004)

Discussion of results

- general plan of the valleys is strongly influenced by the fault system - morphology of the slopes is result of simultaneous activity of the inner rock structure and exogenous processes, in particular river incision and slope processes - these processes are still active, although likely less than in the past - it is necessary to continue in research employing advanced methods: Future works (to be performed within next year) - detailed geodetic profile - powder X-ray diffraction - study of sediments in shafts in floodplain of Losenice R. - automatic extenometric monitoring - refining of scope genesis map, etc.