Abstract

Mass-movements are one example of natural processes that can pose a serious risk for human beings and their possessions. Dendrochronology, a method capable of their reconstruction, can provide parameters of former events, which can be used for planning protective measures. The possibilities for the application of dendrochronological methods have been tested by means of meta-analysis of electronic and printed scientific articles and a case study focused on former avalanche activity in Schustler's avalanche path (Labský důl, Krkonoše Mts.). The main conclusion of the first one is the clear spatial disproportion of the recent dendrogeomorphological research activities – e.g. the dating of avalanches is typical for mountains of Montana (USA); the Alpine region (mainly Switzerland), on the other hand, absolutely dominates in the research of debris-flows. In the case study, the analysis of material with well-chosen indicators led to high accuracy results comparable with the results of scientific articles focused on avalanches, and made the identification of 14 years (in the period 1953-2007) with potential avalanche acitvity possible. Although methods of dendrogeomorphology are usually neglected in the research of avalanches in the Czech republic, their great potential for future applications is shown.

Keywords: dendrogeomorphology, disturbances, mass-movement, meta-analysis, slope processes, wood anatomy