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Non – continuous archive of climatic fluctuations of various order in slope and fluvial systems of C-E Europe during upper Quaternary

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On the continents the continuous deposition reflecting environmental changes is recorded only in sedimentary basins surrounded by barriers protecting them against supply of mineral matter from outside. Most frequently we analyse non- continuous sedimentation in vertical profile and the particular layers, units or complexes may represent time intervals of various time length starting from effect of heavy downpour to multiannual member formed by solifluction or dune and to soil profile created across millennia. The sequences of sediments have many breaks caused by erosion, which also may represent time units of various duration.
To compare these time fragments recorded in particular profiles with continuous ice, sea and lake sequencies we should date these deposits and study them in the complex systems like longitudinal profile of slope or river valley. The reconstruction of degradation and deposition in the profile may help to fill the gap and put all factors in one sequence.
The sequence of loess alternated with fossil soils or the interfingering of deluvial and congelifluction layers in slope profile reflect various length of climatic fluctuation. The correlation of erosional features upstream and depositional fills downstream help to reconstruct not only glacial-interglacial climatic variation but also recognise individual extreme events and their clusterings. The detail correlation of various localities and greater regions lead to the conclusions about the leading role of changes in temperature during cold stages in C-E Europe and leading role of humidity and its extreme events during the Holocene. The mechanism of these events and their clusters recorded at present time may be reconstructed in the deposits and erosional forms inherited from the past. On this way the reconstruction of climatic fluctuation is much more deeper and shows also spatial diversity.
The discussed problems will be illustrated by examples of fluvial and slope sediments from several localities investigated in detail.