Reflection of climatic changes during Interpleniglacial in geoecosystems of Southern Poland

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The central part of Europe during the last cold stage was occupied by permafrost and twice invaded by the Scandinavian ice sheet, but about 70% of time was taken by transitional phases of continuous fluctuations of permafrost, which are reflected especially in type and thickness of slope, fluvial and aeolian deposits.

Two very distinct changes took place: one during the relatively rapid aridisation of climate around 30-25 ka BP (with the ice sheet transgression, expansion of continuous permafrost and the start of loess deposition) and second rapid warmings at 14.8 and 11.7 ka with expansion of forest and change of the hydrological regime. The greatest transformations in the relief of slopes and river valleys (denudation of slopes, thick alluvial fills) took place not in coolest phases with stable permafrost but during Interpleniglacial. The authors exemplified number of sites in Southern Poland documenting frequent fluctuations of temperature and permafrost from that 30 ka long period. Calibrated dates of dated episodes correlate well with ^{18}O NGRIP curve from Greenland with frequent warmings (more than 4 officially named). These rapid warmings are reflected in higher rate of aggradation in valley floors and thick colluvia, both combined with the retreat of permafrost. The authors also suggest to turn more attention to spatial diversity of sediments and forms depending on type of substratum, local relief and topoclimate as well as short episodes of higher intensity of processes, which some try to explain as products of longer phases. In palaegeographical reconstructions, we simplify too much the picture of changes both in space and in time. Therefore the comparison with ^{18}O NGRIP curve is so valuable for establishing so valuable chronology of events even for distant area like Central-Eastern Europe.