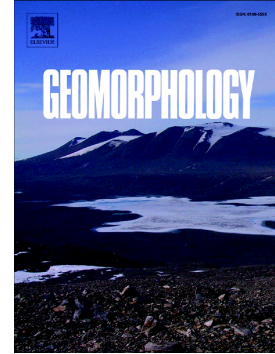


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Closed depressions in the European loess belt – natural or anthropogenic origin?

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Abstract

Closed depressions (CDs) are typical geomorphological features of the loess belt in Europe. CDs have been reported in several regions of the European loess belt, where they are described as hollows, mardelles, wymoki, croyuri, bludtsa and zapadiny. The natural and anthropogenic origins of CDs are debated in literature. Moreover, no comprehensive review of the geomorphic properties or the evolution of these depressions exists. Therefore this paper reviews the characteristics of CDs in the European loess belt and attempts to better understand their genesis based on detailed case studies. The main morphometric features as well as sediment deposits within CDs in several sub-regions of Europe were analysed and compared. Morphometric properties of CDs from the West European and East European loess belt were investigated through a comparison of CDs from two representative regions, i.e. East Poland and Central Belgium. In both study areas, CDs under cropland are similar. However, a comparison of morphological features of CDs under forest, revealed clear differences, suggesting a different origin of CDs from both regions. Infilled sediments in CDs show various litho-genetical features in different regions of the European loess belt. The morphometric features, ages and stratigraphy of infillings clearly indicate that both anthropogenic and natural processes have shaped these landforms within the loess belt of

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