

QUATERNARY TECTONICS OF THE POLISH CARPATHIANS: A GEOMORPHOLOGICAL PERSPECTIVE

ZUCHIEWICZ, W.

The Polish segment of the Outer Carpathians represents a fold-and-thrust belt, composed of a stack of nappes that were piled one upon another during the middle-late Miocene times.

The zones showing tendencies to recent uplift tend to be aligned subparallel to the structural grain of the Outer Carpathians, being frequently confined to frontal thrusts of individual nappes and larger slices. The size of Quaternary uplift within particular structures, approximated by the size of river downcutting into straths of different ages, ranges from a couple of tens to some 150 metres, the rates of downcutting being temporally and spatially variable, and changing from 0.15 to 2.0 mm/yr.

These longitudinal structures are also easily traceable on maps of relief energy, maps of envelopping surfaces, as well as on trend-surface maps showing the elevations of valley bottoms of the same age, i.e. the isobase maps. Relatively small widths of these structures (15-25 km) and their subparallel arrangement in respect to the strike of principal thrusts and folds allow one to suppose that they originated due to Pliocene-Quaternary relaxation of remnant horizontal stresses within the flysch nappes. The number of such zones increases from the west to the east, probably reflecting the diachronous migration of the wave of folding, well known from the Miocene structural history of the region.