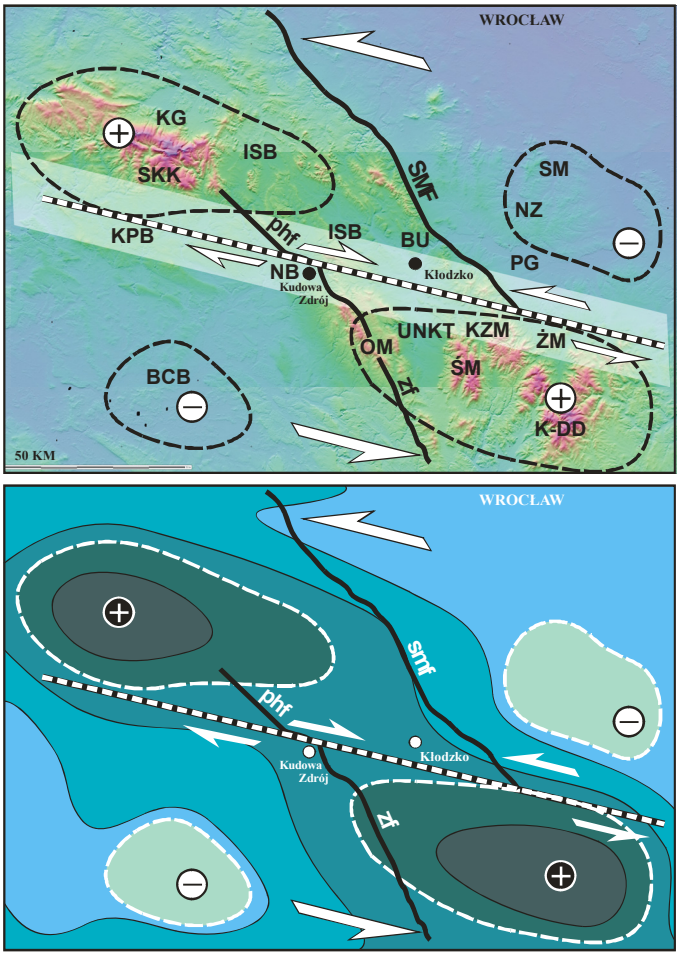
NEOTECTONIC ASPECT OF THE INTRASUDETIC SHEAR ZONE

Jurand Wojewoda

University of Wrocław, Institute of Geological Sciences,
pl. M. Borna 9, 50-204 Wrocław, juwo@ing.uni.wroc.pl

For estimation of recent dynamics of morphology of the Sudetes the satellite radar images of 90-meter resolution have been used. Basing on the Digital Elevation Model (upper figure), the trend surfaces (2) and maps of deviation of the morphology were made (Davis, 1973). The analyzed area ranges over 23000 sq. km. and is bordered by the following coordinates: N51°05'32", N49°56'26", E15°02'42" and E17°37'57".



The 8th-order trend surface records four distinct regional morphological domains (dashed-lines). These are two elevations with their centers located at N50°46'24"/ E15°29'24" and N50°07'24"/ E17°13'07" as well as two depressions with centers located at N50°05'41"/ E15°46'58" and at N50°29'39"/ E17°28'30" respectively. The elevations and depressions extend both over the crystalline massifs and sedimentary basins and are highly lithologically differentiated. On the deviation map, the elevations display the highest positive values which suggests a local disequilibrium of morphogenic processes during the formation of recent topography. Today's landscape have been being shaped since the beginning of the Neogene. As the climatic and hydrological conditions have been rather uniform for the whole area, the tectonic uplift must be accounted for the reason of the indicated anomalies occurrence.

There is only one unique profile across the elevations and depressions that reflects the smallest amplitude of relative height (black-white dashed-line). It is parallel to the dominant "sudetic strike" i.e. 115° and it follows the Intrasudetic Shear Zone (**ISZ**) that played an important role in the post-variscan evolution of the Sudetes. Along and inside the ISZ small, mostly pull-apart basins occur (the Krkonoše Piedmont Basin (**KPB**), the Nachod Basin (**NB**), the Upper Nysa Kłodzka Trough (**UNKT**)) – the South Sudetic Basins Suite (**SSBS**) – which are filled with Permian, Triassic and Neogene sediments. The author postulates right lateral regional displacement along and beneath the ISZ as an important factor controlling long time evolution of topography in the analyzed area. The investigation was financially supported by the State Committee for Scientific Research through grant KBN 2 P04D 016 28. **Davis, J.C., 1973**. *Statistics and data analysis in geology*. John Wiley and Sons, New York. 550 p.