



## **Geomorphometric parameters and geodiversity indirect assessment method. Case study of the Sucha Woda (Tatra Mountains) and Wrzosówka (Karkonosze Mountains)**

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At the current stage of the development of geodiversity research, there are numerous methods for its assessment. These methods may be classified based on two criteria: the source of the data: direct and indirect and the procedure: qualitative, quantitative and qualitative-quantitative (Zwoliński et al. 2017). Although the indirect method offers many possibilities, it is very rarely used.

The main objective of the research is to present the indirect method of geodiversity assessment based on surface parameters (morphometric, hydrological, climatic etc.) and objects (landforms etc.) derived from the one data source- the digital elevation model. The study area consists of two mountain catchments Sucha Woda in Polish part of the Tatra Mountains and Wrzosówka in the Karkonosze Mountains. The following parameters with a distinct contribution to the geodiversity were computed for each area: General Curvature, Topographic Openness, Total Insolation, Topographic Position Index, Topographic Wetness Index, Convergence Index, Relative Heights. Input maps were then standardized and subjected to the map algebra.

The obtained maps were compared to geodiversity maps created based on direct method and reviewed during the field exploration with positive results. The results give a basis to conclude that the methodology used is correct and can be applied for other mountainous areas. However, it should be kept in mind that the accuracy of the obtained maps is strongly influenced by: the quality of the source data and the cell size of the basic assessment. Therefore, it is essential to establish certain standards, guidelines, depending on the target spatial scale and the purpose of the intended studies.