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## Parallel or not? Quantitative and qualitative methods to identify dissimilarities between sub-conformable contacts

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In geological modelling it is often assumed that sub-conformable contacts are parallel. Here, we challenged this assumption by comparing conformable and unconformable horizons within Kraków-Silesian Homocline, Poland. The study objective was to provide both quantitative and qualitative analyses of dissimilarities between contacts of interest. The quantitative portion of the research involved geostatistical modelling of angular distance between contacts subdivided by Delaunay triangulation. We confirmed that in general the angular distances within conformable contacts are smaller than these between genetically unrelated horizons. However, there are exceptions from this rule related mainly to elongated zones of unknown origin in which angular distances are greater for sub-conformable contacts. The qualitative portion of the research was based on a specific variant of spatial clustering method based on Delaunay triangulation. Using this method, we aimed to identify geological differences underlying the increased values of angular distances in specific places. We identified convex forms that are developed only in some of the analysed contacts. These convex forms may be due to differences in the competence of tectonically deformed rocks. In such a case, discrete displacements of brittle sandstones are replaced by continuous deformation of claystones in the cover, represented by fault-related flexures or drape folds, which results in sharp changes in the angular distances observed. Acknowledgements: The project is funded by National Science Centre Poland, 2020/37/N/ST10/02504