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How human activity changes the drainage system in the small mountain catchments? (Carpathian Mountains, Poland)

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In our presentation we analyze human impact on development of active drainage system (ADS) operating during heavy rainfall in mountain catchments. Few flysch catchments located in the Carpathian foothills and Beskidy - medium-high mountain areas were selected for this poster sesion. The ADS is reconstructed with use of ALS-LiDAR data. The results revealed that the density of the ADS may be even 5 times higher compared to the river system. Moreover, in the studied catchments c.a. 25% of the ADS constitute man-origin elements (roads, ditches and plough furrows) incorporated to the drainage system.
The Hortonian type of analysis revealed that man-origin elements significantly change the structure of the natural, river drainage system. Those man-origin elements are predominantly attributed to 1st and 2nd order stream, which drain the upper part of the hillslopes.
The results will be discussed in the context of geomorphological transformation of the hillslopes and catchments hydrological response.