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Automatic geological structure recognition at the Dead Sea lakebed

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This research aims at developing and applying a machine learning based algorithm to detect geological structural features at the exposed Dead Sea shoreline. We focus on sinkhole, stream-channel and crack features that appear in different material at the coastlines, and pose partly a threat for the local population and infrastructure. We use high resolution orthophotos and satellite images from the last years, as well as derived topographic models to reach an automatic identification and classification of these structures. The aim is to train a convolutional neural network that can identify these structures on recent datasets from satellite images in order to establish an automated detection of hazardous and active zones in the area. Furthermore, we use the algorithms to detect structures in the shallow waters of the lake.