



Highly organic soils in Scotland as seen by Sentinel 1 and 2 sensors

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Soil is the basis for many land functions. Organic soils are an important sink and a potential source of carbon. It is necessary to understand how organic soils vary over space in the landscape. Remote sensing data can be instrumental in mapping and modelling of presence of highly organic soils and its variability. The aims of this study were to assess Copernicus Sentinel sensors (Sentinel-1 and Sentinel-2) to map the presence of highly organic soils in Scotland, and to evaluate the potential benefits of using exclusively a radar sensor for this. Different approaches were tested: non-linear regression kriging, machine learning and deep learning. The preliminary results show that Copernicus Sentinels 1 and 2 have great potential to detect highly organic soils. The radar sensor of Sentinel 1, coupled with morphological features derived from a digital elevation model, provides a very good modelling choice. The use of only radar has huge implications in regions with high cloud cover.