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Regional Characterisation of soil properties by combining remote sensing, geophysical and pedological methods

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Knowing our soils well, is the base for a sound land use management, and thus for a worldwide sustainable food production and safe drinking water supply. Especially in countries of the Global South, high quality digital information on soil properties on regional level are rare. While conventional soil inventories are time consuming, digital mapping of soil properties is a promising approach to close the gap more quickly. For this purpose, a reliable method is developed within the BGR project "ReCharBo" (Regional Characterisation of Soil Properties) to minimize field and laboratory work by combining remote sensing techniques like hyperspectral and thermal analyses as well as geophysical methods (e.g. gamma spectrometry) with conventional soil survey from different scales. At local and field-scale the data acquisition is done by drones, portable equipment and soil sampling, complemented at regional level by helicopter and satellite supported methods. In a corresponding talk in the same session Mommertz et al. (2021) give a detailed technical overview of the selected methods and the research concept of the project. To deploy the method including the concept of ground-truthing on arable land, areas in Germany were selected from Soil Maps of Germany at scale 1:1.000.000 (BÜK1000), 1:200.000 (BÜK200) and 1:50.000 (BK50) depending on representative soil types and region. In a first attempt, the research concept was carried out with simultaneous field and air borne analyses at two sites in autumn 2020. The results of this first attempt will be presented at the conference.