Investigation of karst features in the Kusma area of Parbat district using electrical resistivity tomography and ground penetrating radar

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This research illustrates the application of geophysical method to detect karst features in the Kusma area, Parbat district. The Kusma area is covered by at least three levels of very thick river terraces. The upper (oldest) and middle terraces are composed of matrix-supported calcareous conglomerate with angular clasts of various sizes and shapes. They are of about 200 m thick. The lower (youngest) terrace represented recent fluvial deposit is about 20 m thick. Kart characterized by the sinkholes, caves, sinking valleys, pinnacle rock heads and karrens are found in the middle terrace. Two-dimensional (2D) Electrical Resistivity Tomography (ERT) and Ground Penetrating Radar (GPR) survey was carried out in the present study in order to locate the subsurface karsatic features such as voids or cavities. The study demonstrates that the ERT survey can be effectively applied to refl ect and differentiate superficial soil, clay, weathered rocks, compact of intact rocks, and air filled karstic features. The GPR method was also found to be an effective technique for the identify cation of subsurface features.