



Erosion and deposition processes determined by terrestrial laser scanner and photogrammetric techniques.

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Erosion and deposition processes in badland areas have been widely estimated by discrete and traditional observations of topographic changes measure by erosion pins or profile meters (invasive techniques). In recent times, geomatic techniques (non-invasive) have been routinely applied in geomorphology studies, and especially in erosion studies. These techniques provide the opportunity to build high resolution topographic models at sub-centimeter accuracy. By comparing different DEMs of the same area, obtained at different moments, variations in the terrain and temporal dynamics can be analyzed. The aim of this study is to assess and compare the functioning of Terrestrial Laser Scanner (TLS, LPM-321 RIEGL) and close-range photogrammetry techniques (Camera FUJIFILM, Finepix x100 and Software PhotoScan by AgiSoft) to evaluate erosion and deposition processes in a humid badland area.

Results show that TLS data sets and photogrammetry techniques provide new opportunities in soil erosion studies. Moreover, the non-contact nature of both techniques removes problematic complications of surface disturbance when using traditional and invasive methods.