# THE LASER SCANNER AS A TECHNIQUE TO HELP MULTIDISCIPLINARY ANALYSIS AND GEOEDUCATION

*Borges, A.M.[1]; Vieira, L.D[1]; Mouro, L.D.[1,2]; Silva, M.S[1]; Waichel, B.L.[1]*
[1]Universidade Federal de Santa Catarina, PFRH-PB 240; [2]Universidade Federal do Rio de Janeiro;

The Laser Scanner is a versatile equipment utilized in several science and technologic areas, showing interesting features mainly in construction and geoscience, as it can be used to generate 3D models of objects under studies. The functional system is based on principles of optical physics, wherein the reading of the dots that will form the data cloud will be made by emission of laser beams, aimed on georeferenced targets, these targets are set according to the area or object to be scanned, being necessary at least, three targets to make a triangulation of referenced targets. These points, where the targets will be arranged, can be georeferenced with the support of a total station, high-precision GPS or using a triangulation pillar, if available on site, thus the coordinates of each point, related to its respective target, are obtained. Here we present the use of Laser Scanner as a tool of grouping field data, as well as supporting the visualization not registered outcrops exposures, as roadside outcrops, quarries, and others expositions that have important academic information and are subject to weathering conditions or human activities which lead to partial or complete destruction of its features. In the city of Itaiópolis, Santa Catarina, there is the exposure of fossiliferous sedimentary packages of Taciba Formation (Permian), covered by the sills of Serra Geral Formation (Cretaceous), both belonging to the Paraná Basin (Ordovician-Cretaceous). These outcrops have large multidisciplinary informations besides good exposure to educational teaching, however it is exposed to the aforementioned conditions, thus a 3D modeling of these exposures was made. In the three-dimensional model generated by the device, are grouped faciological, palynological, geochemical informations and fossiliferous assemblies on site, favoring the integrated interpretation of the geological processes in the outcrops. Furthermore the potential of the equipment to preserve the exposures informations contributes as a valuable teaching tool, enabling the visualization of several types of outcrops in various locations, as well as those that was scanned and subsequently have been degraded or with difficult access. At the same time, we propose the application of scanning in already recognized as geoparks, in order to monitor and fix up conservation techniques, observing the changes over time through periodic scans.

**KEY-WORDS:** LASER SCANNER; GEODUCATION; 3D.