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# Towards digital preservation of Repedea's big quarry outcrop using "Structure-from-Motion" photogrammetry tools

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**Abstract**

In the present paper, four free "structure from motion" photogrammetry tools (Visual SfM with PMVS/CMVS, Photosynth with PhotoSynthToolkit, 123D Catch and Recap Photo) have been compared using photographs taken from four locations in Hăşmaş Mountains, in order to determine which tool is better suitable for Repedea Hill's big quarry outcrop preservation and study. The results have shown that 123D Catch has provided a very good texture and geometry detail of the 3D models that can also be used with ease between many modeling software. Therefore the resulting Repedea 3D outcrop models (nine 3D models) are precise and highly detailed preserving a good geometry of the original outcrop and making possible a preliminary calculation of surfaces and volumes of some parts from the studied area. Thus, digitizing the outcrop partially solves the problem of geological reservation preservation by keeping the studied area in a virtual environment in which further geological investigation is possible.

**Keywords:** Repedea Hill, structure from motion photogrammetry, 3D outcrop, geological reservation, Hăşmaş Mountains, Moldavian Platform.

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