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How useful are drones to derive digital stratigraphic logs? Validation of a drone's based Digital Geological Orthophotographic Model with field data

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We present a follow up from last year preliminary assessment of Digital Geological Orthophotographic Models (DGOM) derived from drone's images using photogrammetric and Structure from Motion principles, over a well studied outcrop in Calabria, Southern Italy. The field data come from detailed stratigraphic logs carried out by different generations of researchers and students in the area. The DGOM has been created starting from overlapping photos acquired by a commercial drone (DJI Phantom 4 Pro) using freely available flight planning apps (Drone Deploy and Pix4D Mapper) installed on an iPad.
The data have been analysed using a suite of different software and cloud-based services, like: Agisoft Photoscan, DroneDeploy, Meshlab, 3D Survey, and Adobe Illustrator.
The validation has been carried out in a blind way: one authors, here called the blind interpreter because he had no prior knowledge of the field area, carried out the geological interpretation of the DGOM; the second author, the expert interpreter due to her detailed field knowledge of the stratigraphy of the same area, also carried out an interpretationof the DGOM.
We then compared both results to check and validate the outcomes of the blind interpreter.
We will highlight the overall results presenting the methodology used and showing the very good degree of agreement between the two interpretations. We will also highlight the pros and cons of using a suite of software and methods to reach our objective.
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