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3D Solarweb: A solar cadaster in the Italian Alpine landscape

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Abstract. The paper presents the research carried out in the on-going 3DSolarWeb project to test and implement a complete pipeline for the generation of a solar cadastre of building roofs located in alpine areas. The project aims at providing reliable results in a costeffective way, using (low resolution) available data and new aerial imagery acquisitions as input. The environmental context is digitally represented using already existing low resolution LiDAR data (1 – 2 m resolution), while the urban area is modelled using high resolution aerial images (10 – 20 cm GSD) and photogrammetric DSM. Reliable models and algorithms for the estimation of the incoming sun radiance are then adopted and a WebGIS is set up for the interactive calculation of the photovoltaic (PV) potential in a raster-based form. The paper summarizes the entire pipeline and the results (Figure 1) achieved on the test areas to show the potentialities of the method and the web-based service.

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