
Return of experience and evolution of the ForM@Ter/THEIA/DINAMIS DSM-OPT stereo-photogrammetric on-demand service for relief analysis

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Résumé

Pleiades satellite imagery can be acquired in stereoscopic/tri-stereoscopic modes allowing the Earth’s surface to be covered at a resolution of 0.70 m with slightly different angles of incidence and from the same orbit. The photogrammetric processing of the image allows the images to be matched and their depths to be reconstructed, thus generating very high-resolution topographic models of the ground.

Since September 2021, the solid earth data hub ForM@Ter of the Research Infrastructure DATA-TERRA, in collaboration with the THEIA data hub and the DINAMIS service launched the DSM-OPT (Digital Surface Models from OPTical stereoscopic very-high resolution imagery) on-demand webservice available to the French scientific and institutional community at <https://en.poleterresolide.fr/services-en/mns>.

The service allows the creation of Digital Surface Models including elevation grids, quality indicators, shaded relief maps, true orthoimages and precise 3D absolute alignment using very-high resolution reference topographic models including LiDAR datasets.

The service is in permanent evolution since September 2021, in order to take into account the needs (processing options, product dissemination, post-processing functions) of several

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categories of users (science community, public authorities, private companies) in several thematic domains (solid earth, continental surfaces, coastal environment). Collections of DSMs are now available and disseminated freely with an open license through the ForM@Ter catalogue.

The objective of this presentation is to present the current status of the service, the technological developments in progress, the recent needs expressed by several users. It will be illustrated by several DSMs products generated for volcanoes, landslides, glaciers, forests and urban environments.

Mots-Clés: Digital Surface Models, Webservice, Satellite photogrammetry, DATA, TERRA, ForM@Ter, Theia, Dinamis