



Pléiades Glacier Observatory : DEM

Date : 2022-03-01
Site : Peteroa_SAN

DEM information

| | |
|--|------------------------------|
| Coordinate system | UTM 19 south - EPSG 32719 |
| Correlation algorithm | Block Matching (BM) |
| DEM resolution | 2 m and 20 m |
| Reference for height | Ellipsoidal Height (WGS84) |
| Shift vector to Copernicus GLO-30 (m) | dx=+2.85; dy=+9.87; dz=-7.67 |
| Base-to-Height ratio (B/H) | 0.26 |

Source images

PHR DS_PHR1B_202203011443182_FR1_PX_W071S36_0618_01313
PHR DS_PHR1B_202203011442538_FR1_PX_W071S36_0618_01332

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Archive structure

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└─ 2022-03-01_1443308_Peteroa_SAN
  └─ BM
    └─ 2022-03-01_1443308_Peteroa_SAN_1B_DEM_BM_2m.tif
    └─ 2022-03-01_1443308_Peteroa_SAN_1B_DEM_BM_20m.tif
    └─ README_BM_DEM.pdf
    └─ PREVIEW_2022-03-01_1443308_Peteroa_SAN_1B_DEM_BM_20m.png
    └─ Coreg_2022-03-01_1443308_Peteroa_SAN_1B_DEM_BM_20m_vs_Cop30.png
  └─ SGM
    └─ 2022-03-01_1443308_Peteroa_SAN_footprint.shp
    └─ 2022-03-01_1443308_Peteroa_SAN_footprint.dbf
    └─ 2022-03-01_1443308_Peteroa_SAN_footprint.prj
    └─ 2022-03-01_1443308_Peteroa_SAN_footprint.shx

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Description

DEMs and orthoimages were generated from raw Pléiades images using the Ames Stereo Pipeline [Beyer et al., 2018]. The set of processing parameters used for DEM generation are from [Marti et al., TC, 2016] for block matching -BM- and from [Deschamps-Berger et al., 2020] for semi global matching -SGM.

All DEMs and orthoimages are coregistered on the Copernicus GLO-30 DEM using the demcoreg tool [Shean et al., 2021].

Acknowledgement statement: The Pléiades images/DEMs used in this study was provided by the Pléiades Glacier Observatory initiative of the French Space Agency (CNES) and Laboratoire d'Etudes en Géophysique et Océanographie Spatiales (LEGOS).

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References

Beyer et al.: The Ames Stereo Pipeline: NASA's Open Source Software for Deriving and Processing Terrain Data, Earth and Space Science, 5(9), 537–548, doi:10.1029/2018EA000409, 2018.

Shean et al.: dshean/demcoreg, Zenodo, v1.1.0, <https://doi.org/10.5281/zenodo.5733347>, 2021.

Deschamps-Berger et al.: Snow depth mapping from stereo satellite imagery in mountainous terrain: evaluation using airborne laser-scanning data, The Cryosphere, 14(9), 2925–2940, <https://doi.org/10.5194/tc-14-2925-2020>, 2020.

Marti et al.: Mapping snow depth in open alpine terrain from stereo satellite imagery, The Cryosphere, 10(4), 1361–1380, doi:10.5194/tc-10-1361-2016, 2016.