atlanta_stereo

Processed on: 2025-12-24 07:02:55

DEM Summary

Property	Value
DEM File	run-DEM.tif
Dimensions (px)	2818 x 2685
GSD (m)	2.00
CRS	EPSG:32616
Nodata (%)	4.7
Elevation Range (m)	231.7 to 309.5

Input Scenes

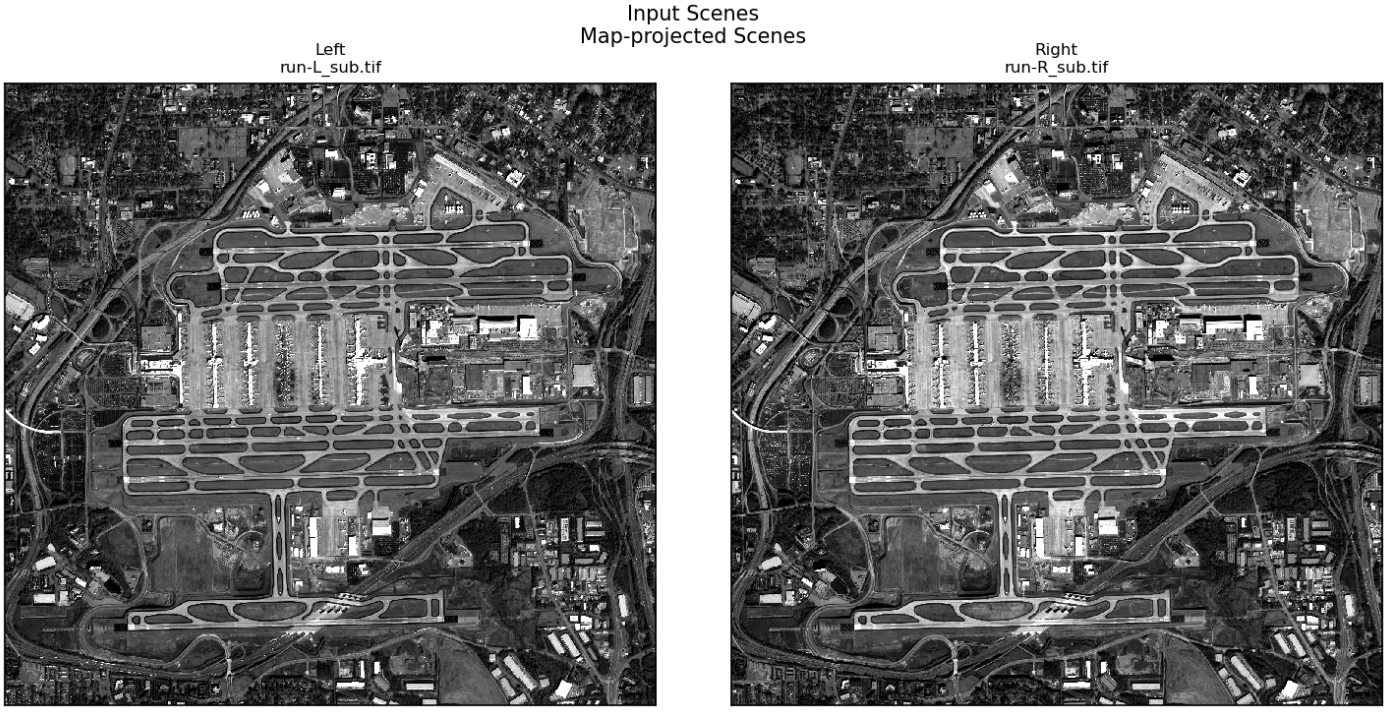

Figure 1: Left and right input scenes used for stereo processing.

Stereo Geometry

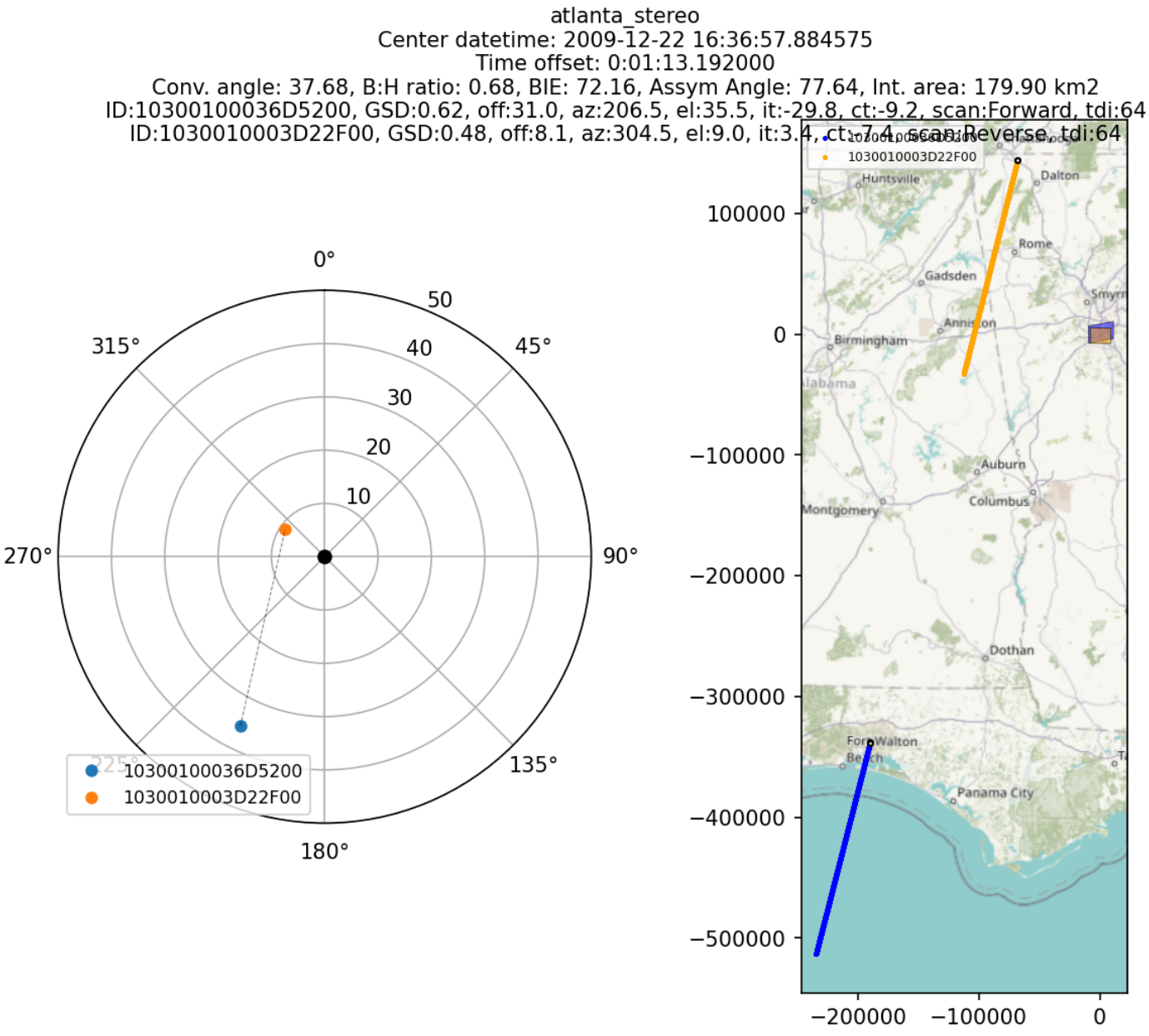

Figure 2: Stereo acquisition geometry skyplot and map view showing satellite viewing angles and scene footprints.

Match Points

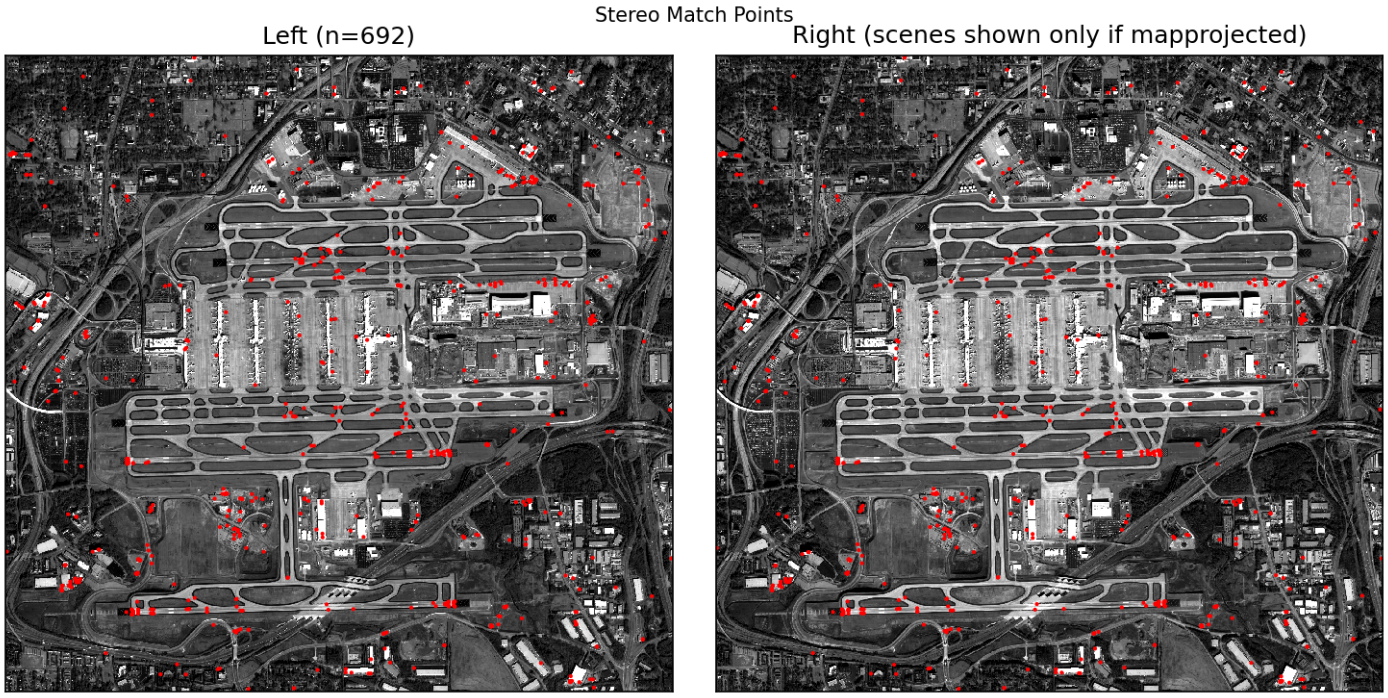

Figure 3: Interest point matches between left and right images identified during stereo correlation.

Detailed Hillshade

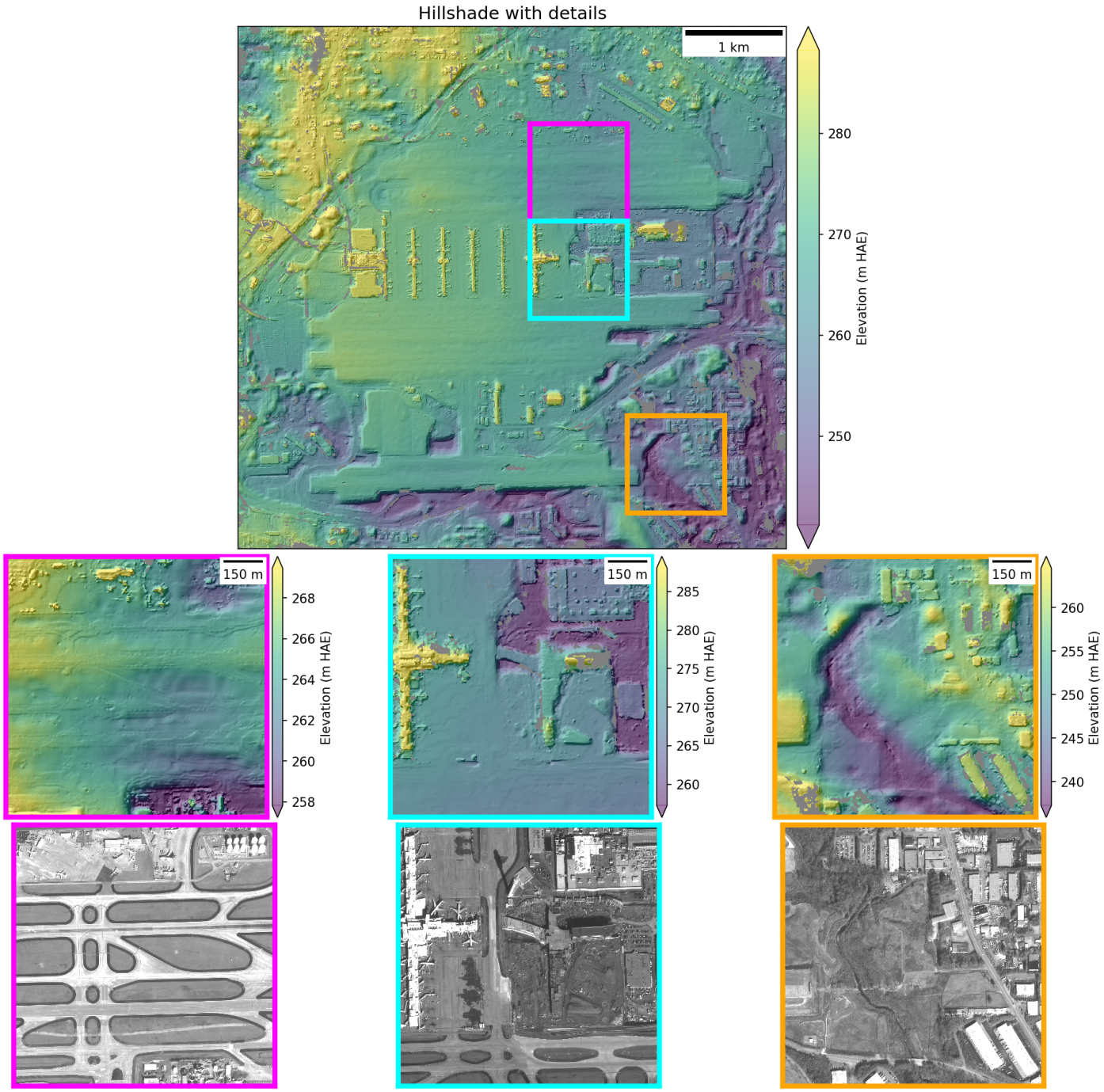

Figure 4: DEM hillshade with 1.0 km detail subset in second row. If available, corresponding mapprojected ortho image subsets are displayed in the bottom row.

DEM Results

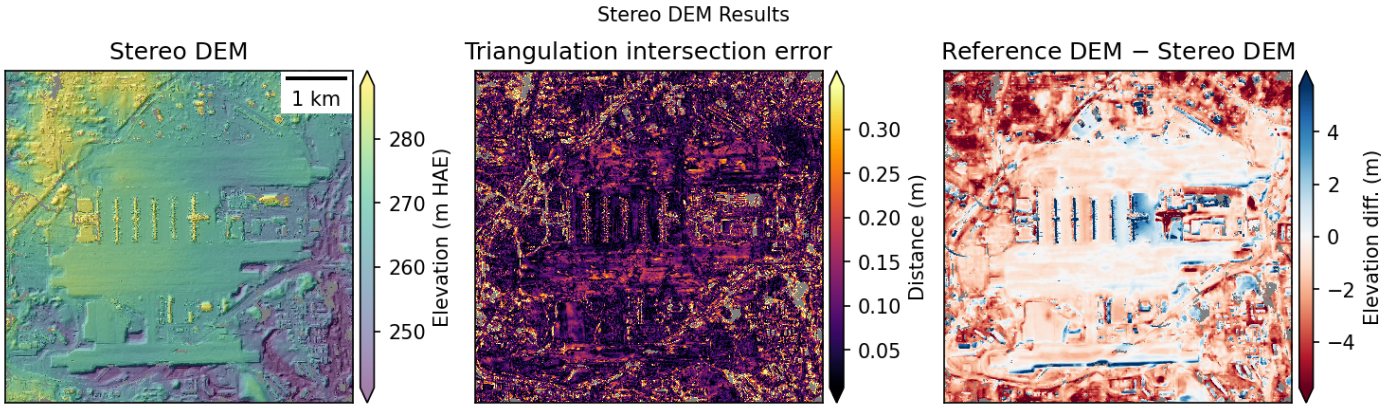

Figure 5: Output DEM with intersection error map and difference relative to the reference DEM used in processing.

Disparity

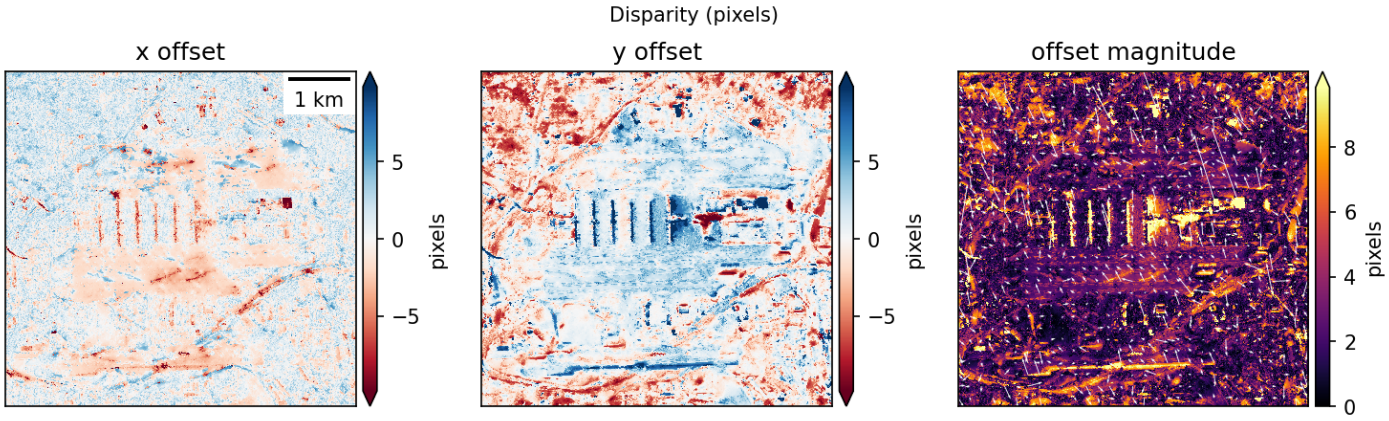

Figure 6: Horizontal and vertical disparity maps in pixels with quiver overlay.

ICESat-2 ATL06-SR Map (All)

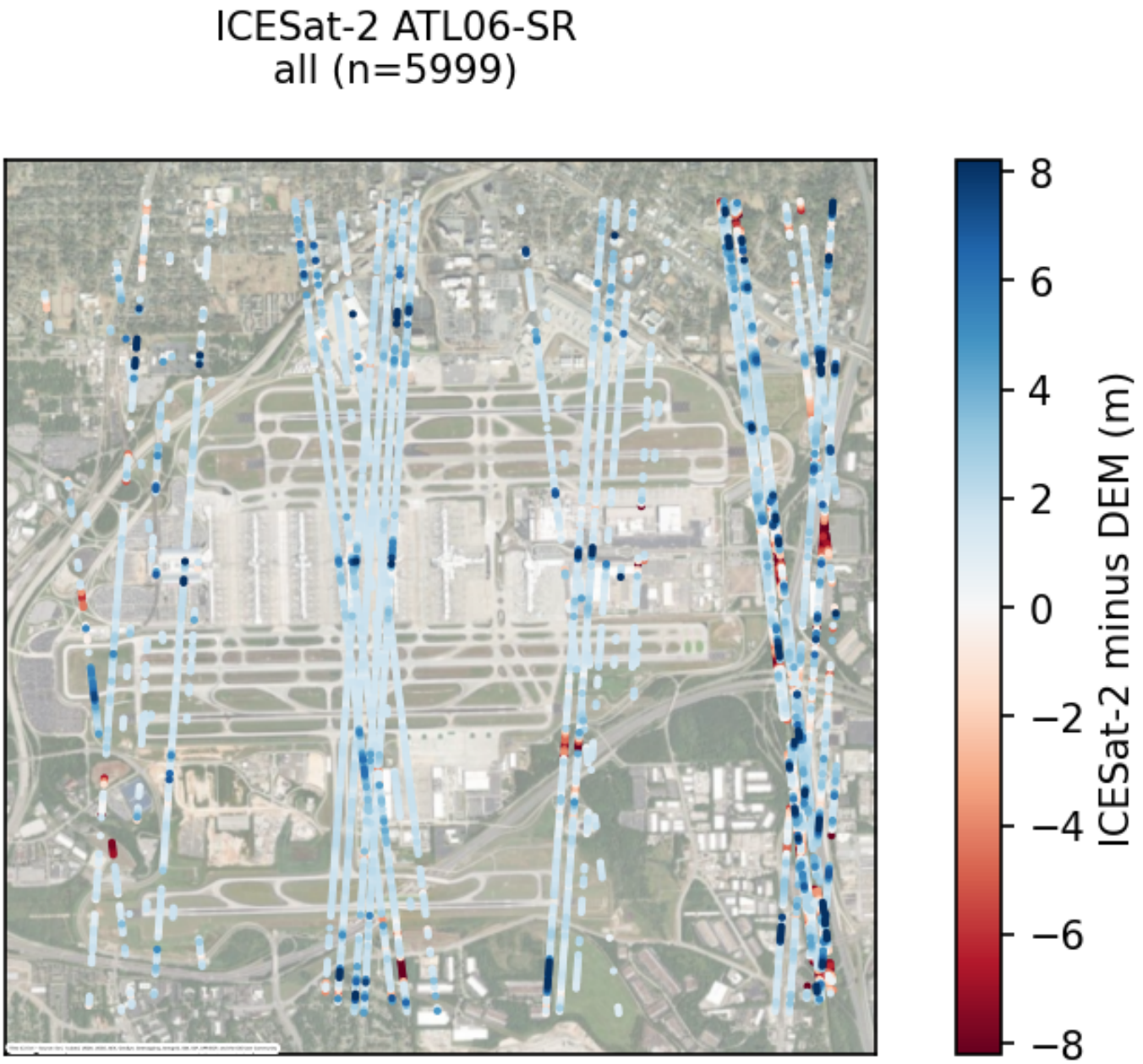

Figure 7: ICESat-2 ATL06-SR elevation differences (all processing levels) vs. ASP DEM.

ICESat-2 ATL06-SR Histogram (All)

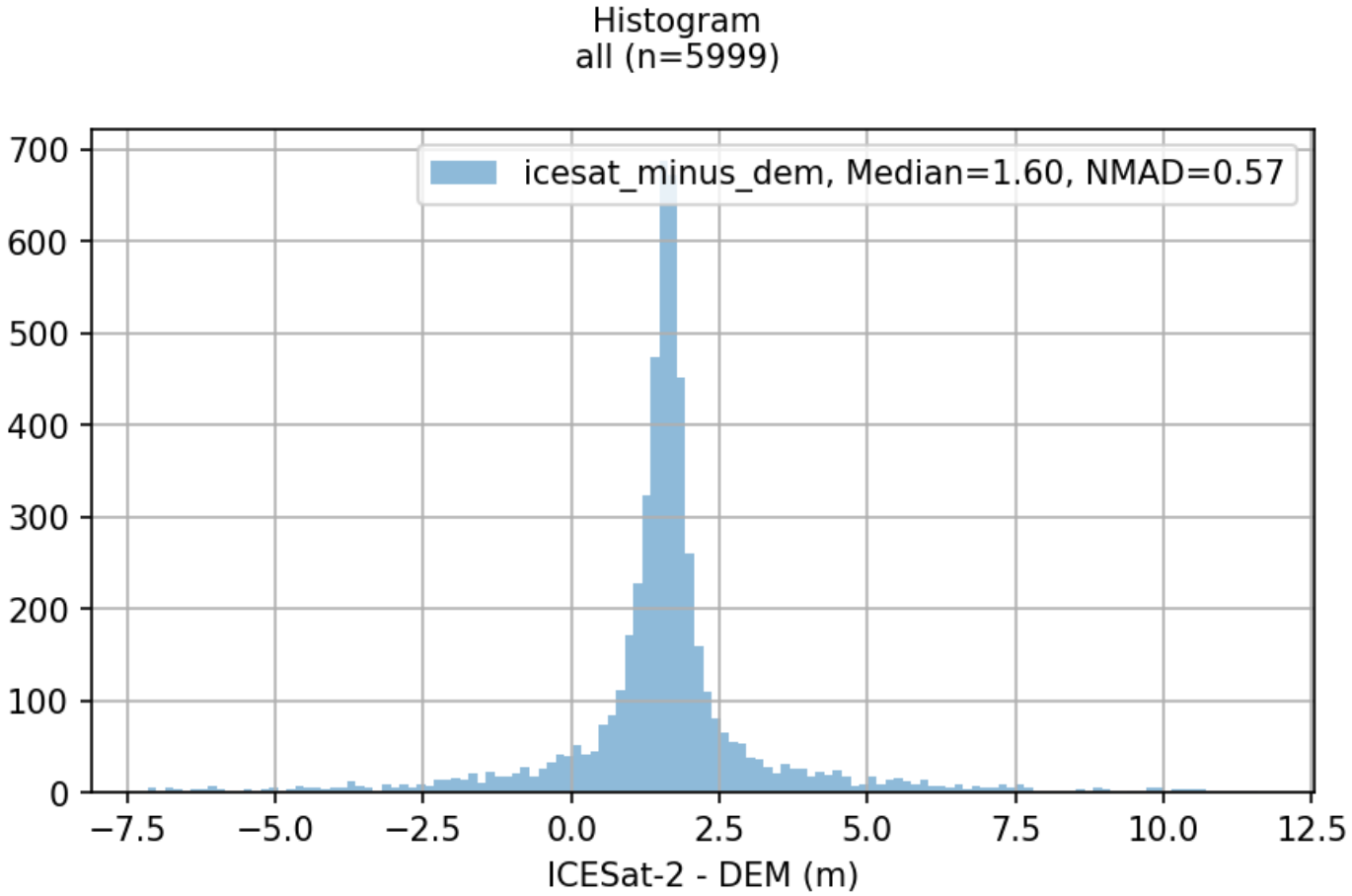

Figure 8: Distribution of elevation differences between ICESat-2 ATL06-SR (all) and ASP DEM.

ICESat-2 ATL06-SR Map (Ground, Seasonal)

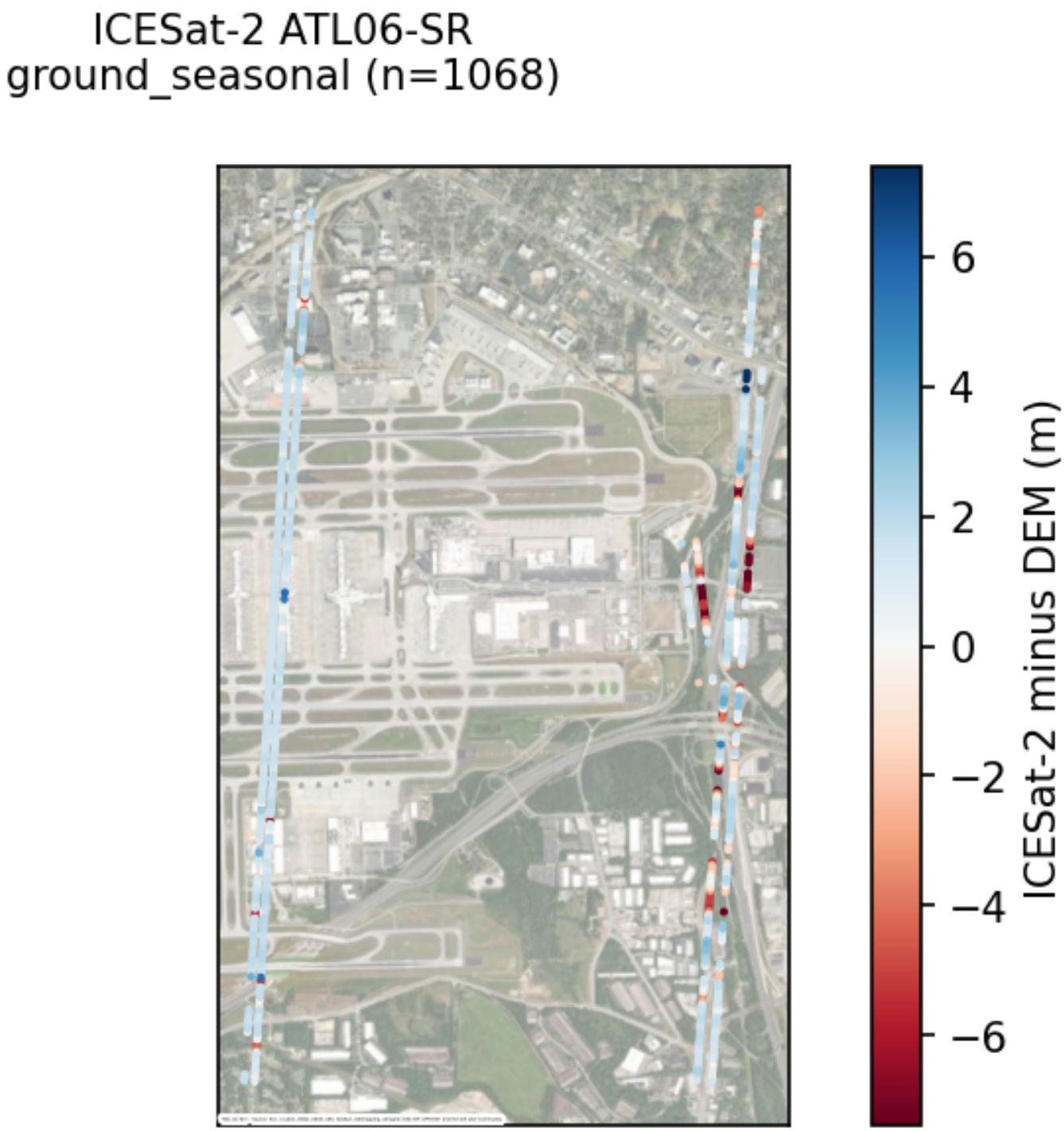

Figure 9: ICESat-2 ATL06-SR elevation differences (ground, seasonally filtered) vs. ASP DEM.

ICESat-2 ATL06-SR Histogram (Ground, Seasonal)

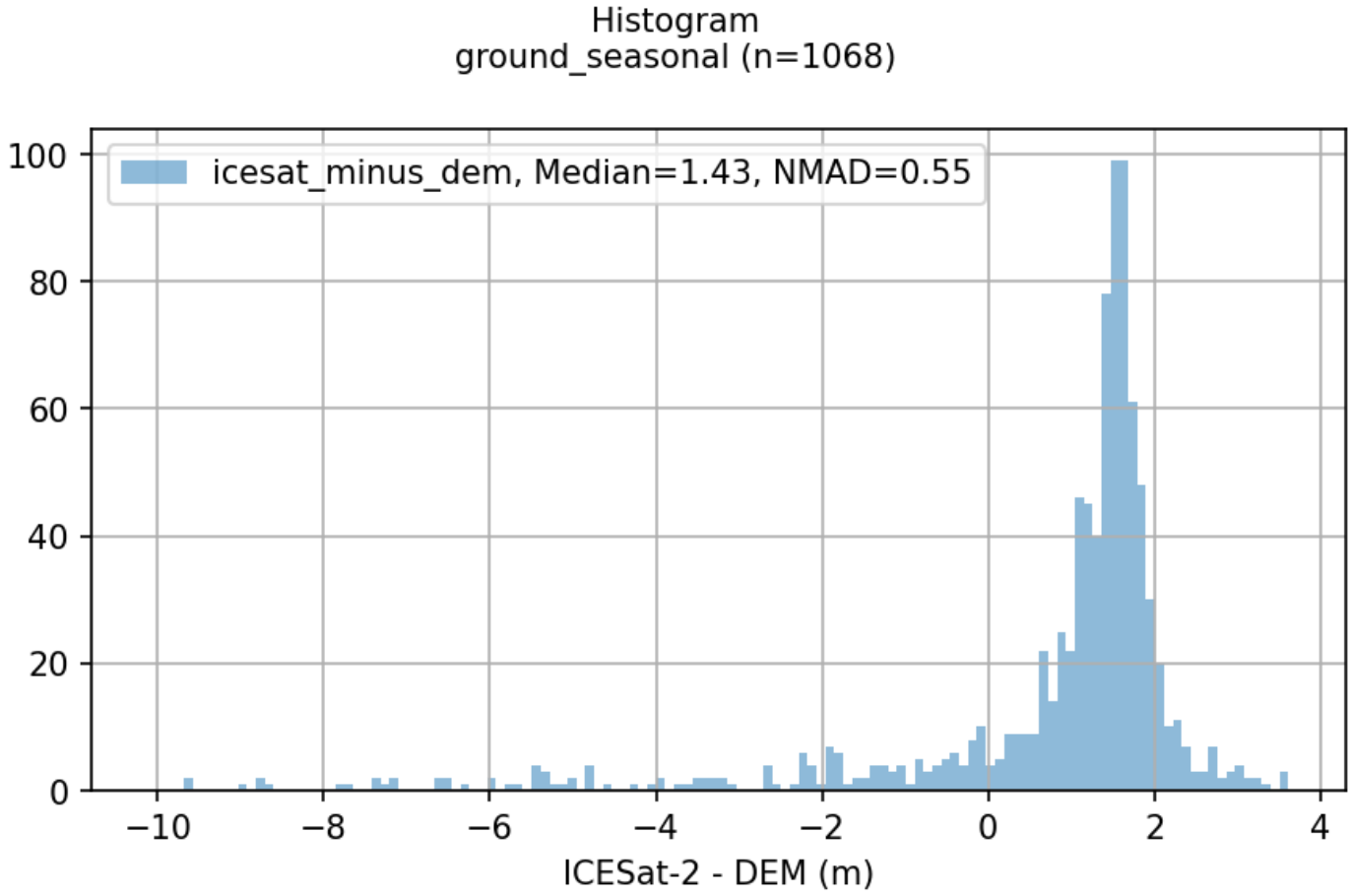

Figure 10: Distribution of elevation differences between ICESat-2 ATL06-SR (ground, seasonal) and ASP DEM.

Bundle Adjust Residuals (Log Scale)

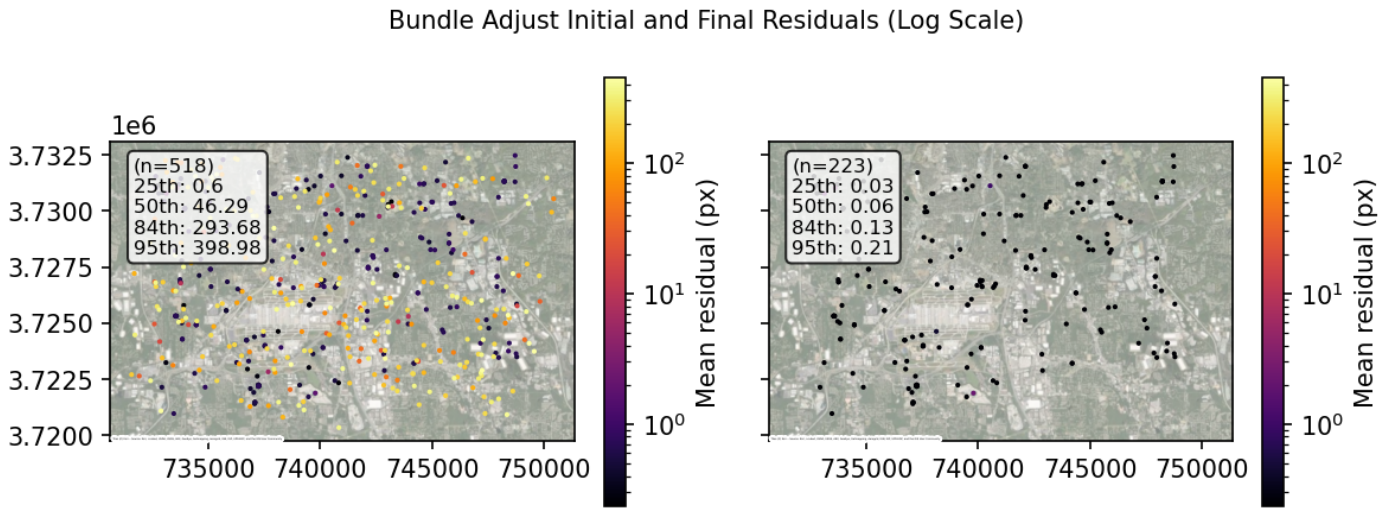

Figure 11: Initial and final bundle adjustment residuals on a logarithmic scale.

Bundle Adjust Residuals (Linear Scale)

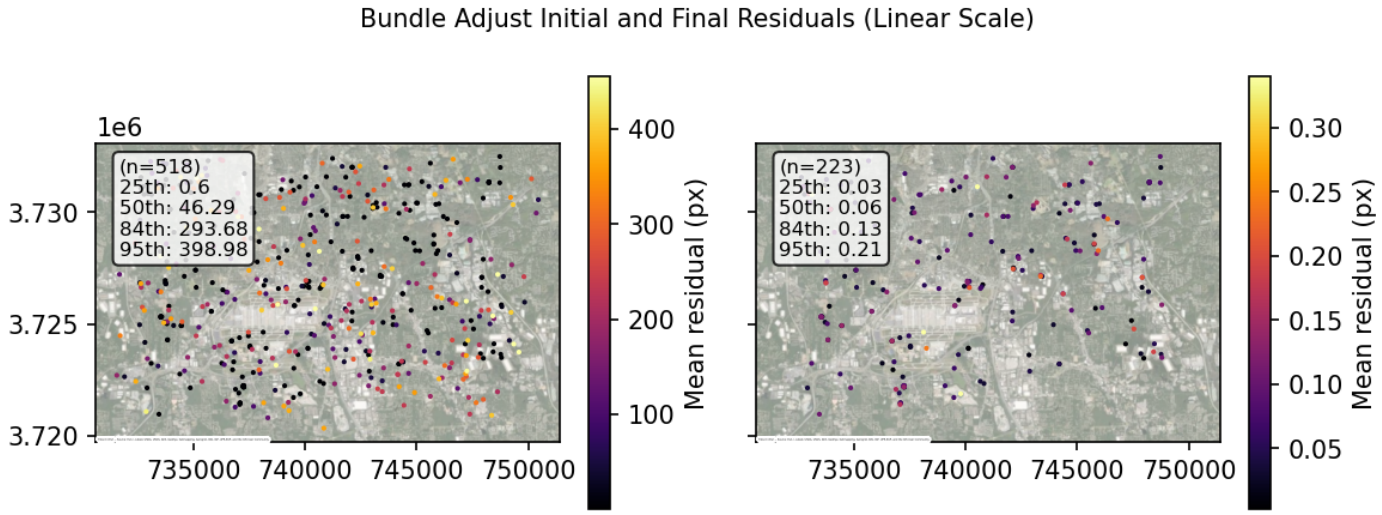

Figure 12: Initial and final bundle adjustment residuals on a linear scale.

Processing Parameters

Runtime Summary

Step	Runtime
Bundle Adjust	0 hours and 2 minutes
Stereo	0 hours and 45 minutes
point2dem	0 hours and 1 minutes

Reference DEM:

```
ref/cop30_atlanta_wgs84_utm.tif
```

Bundle Adjust Command:

```
bundle_adjust --threads 24 --ip-per-image 10000 --tri-weight 0.1 --tri-robust-threshold 0.1 --camera-weight 0
10300100036D5200_P002_corr.tif 1030010003D22F00_P001_corr.tif 10300100036D5200_P002.xml 1030010003D22F00_P001.xml -o
ba/run
```

Stereo Command:

```
stereo --stereo-algorithm asp_mgm --subpixel-mode 9 --alignment-method none --bundle-adjust-prefix ba/run --corr-seed-
mode 1 --compute-point-cloud-center-only --threads 48 10300100036D5200_P002_corr_map.tif
1030010003D22F00_P001_corr_map.tif 10300100036D5200_P002.xml 1030010003D22F00_P001.xml stereo/run
ref/cop30_atlanta_wgs84_utm.tif
```

point2dem Command:

```
point2dem --tr 2 --t_srs EPSG:32616 --errorimage stereo/run-PC.tif
```