Supplement to: Seasonal and interannual variability of Columbia Glacier, Alaska (2011-2016): ice velocity, mass flux, surface elevation and front position

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This dataset contains TanDEM-X (TerraSAR-X add-on for Digital Elevation Measurement) digital elevation models (DEMs) and glacier surface velocities of Columbia Glacier during 2011-2016. Detailed information on the data, methods and error assessment of the dataset can be found in Vijay, S. and Braun, M. (2017) Accepted (DOI awaited).

1. Glacier surface velocities

Glacier surface velocities were derived from the active SAR images of the repeat-pass TanDEM-X data using SAR offset tracking method.

Data format: GeoTIFF

File naming convention: The GeoTIFF files are named according to the following convention.
daily_geo_velocity_XXXXXXXX_ ZZZZZZZZ.tif

daily – The units of the derived surface velocities are m/day

geo – All the files are geocoded to TanDEM-X DEM of 2012

velocity – The files contain the magnitude of surface velocity

XXXXXXXX- The date (YYYYMMDD format) of the first SAR image of the data pair used for surface velocity generation

ZZZZZZZZ- The date (YYYYMMDD format) of the second SAR image of the data pair used for surface velocity generation

tif- All the files are in GeoTIFF format.

2. TanDEM-X DEMs

The TanDEM-X DEMs were generated using SAR interferometry applied over co-registered SAR images (CoSSC).

Data format: GeoTIFF

File naming convention: The GeoTIFF files are named according to the following convention.
geo_tdx_XXXXXXXX.dem_ updated.tif

geo – All the files are geocoded to TanDEM-X DEM of 2012

tdx – The files were generated from the TanDEM-X data.

XXXXXXXX- The date (YYYYMMDD format) of the bistatic TanDEM-X data used for TanDEM-X DEM generation

dem- The files contain TanDEM-X elevations in meters.

updated- The files were first geocoded with an external DEM and in an iterative process using TanDEM-X elevations. Therefore it is called updated.

tif- All the files are in GeoTIFF format.