swath_compare_interps

July 31, 2019

```
[2]: import numpy as np
     import xarray as xr
     import matplotlib.pyplot as plt
     import utm as utm
     import glob as glob
```

1 Swath 002

```
GRD Latitude Lines                                      (-)        = 11840
GRD Longitude Samples                                   (-)        = 21911
GRD Starting Latitude                                   (deg)      = 61.664222222222229
GRD Starting Longitude                                  (deg)      = -43.661833333333334
GRD Latitude Spacing                                    (deg)      = -2.777777777777778E-05
GRD Longitude Spacing                                   (deg)      = 5.555555555555556E-05
```

```
[3]: grd_dir = '/Users/ifenty/Documents/Work/My Projects/2019_omg_intern_tmp/002/
     ↪002_greenl_mine_t003_r015c/002_greenl_29101_greenl_29100_netCDF'
     g = glob.glob(grd_dir + '/*nc')

     G = list()
     for gi in g:
         print (gi)
         G.append(xr.open_dataset(gi))

     for gi in G:
         print (gi.x)
```

```
/Users/ifenty/Documents/Work/My Projects/2019_omg_intern_tmp/002/002_greenl_mine
_t003_r015c/002_greenl_29101_greenl_29100_netCDF/15m_greenl_29100_18010_015_1803
08_ALTTBB_HH_01testing3.nc
/Users/ifenty/Documents/Work/My Projects/2019_omg_intern_tmp/002/002_greenl_mine
_t003_r015c/002_greenl_29101_greenl_29100_netCDF/15m_greenl_29101_16027_004_1603
21_ALTTBB_HH_03testing3.nc
/Users/ifenty/Documents/Work/My Projects/2019_omg_intern_tmp/002/002_greenl_mine
_t003_r015c/002_greenl_29101_greenl_29100_netCDF/15m_greenl_29100_17031_002_1703
```
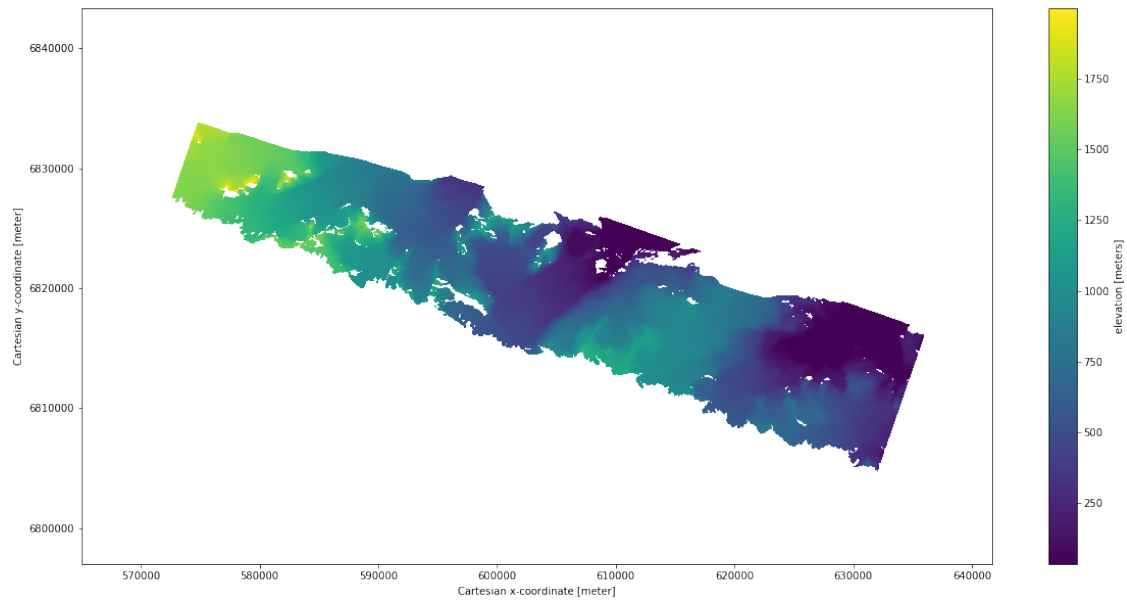
```
14_ALTTBB_HH_04testing3.nc
<xarray.DataArray 'x' (x: 5111)>
array([565007.5, 565022.5, 565037.5, ..., 641627.5, 641642.5, 641657.5])
Coordinates:
  * x        (x) float64 5.65e+05 5.65e+05 5.65e+05 ... 6.416e+05 6.417e+05
Attributes:
    units:                  meter
    long_name:              Cartesian x-coordinate
    coverage_content_type:  coordinate
    standard_name:          projection_x_coordinate
    axis:                   X
    valid_range:            [565007.5 641657.5]
<xarray.DataArray 'x' (x: 5111)>
array([565007.5, 565022.5, 565037.5, ..., 641627.5, 641642.5, 641657.5])
Coordinates:
  * x        (x) float64 5.65e+05 5.65e+05 5.65e+05 ... 6.416e+05 6.417e+05
Attributes:
    units:                  meter
    long_name:              Cartesian x-coordinate
    coverage_content_type:  coordinate
    standard_name:          projection_x_coordinate
    axis:                   X
    valid_range:            [565007.5 641657.5]
<xarray.DataArray 'x' (x: 5111)>
array([565007.5, 565022.5, 565037.5, ..., 641627.5, 641642.5, 641657.5])
Coordinates:
  * x        (x) float64 5.65e+05 5.65e+05 5.65e+05 ... 6.416e+05 6.417e+05
Attributes:
    units:                  meter
    long_name:              Cartesian x-coordinate
    coverage_content_type:  coordinate
    standard_name:          projection_x_coordinate
    axis:                   X
    valid_range:            [565007.5 641657.5]
```

```python
[4]: plt.figure(figsize=(20,10))
     (G[2].elevation.plot())
```
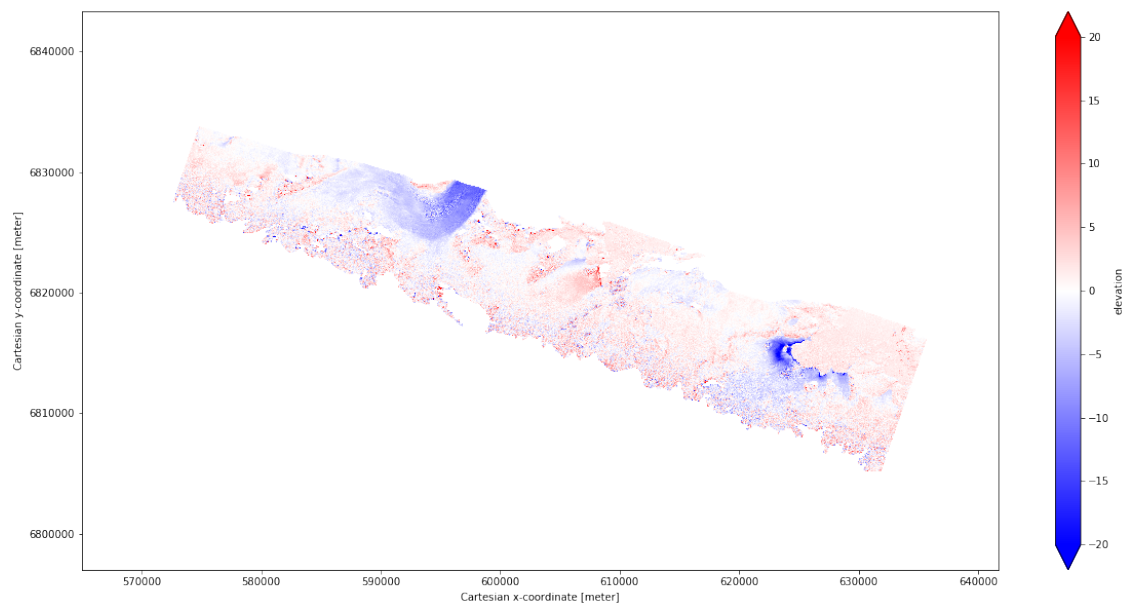
```
[4]: <matplotlib.collections.QuadMesh at 0x166d0c518>
```

1.0.1 2018 - 2017

```python
plt.figure(figsize=(20,10))
(G[0].elevation - G[2].elevation).plot(vmin=-20,vmax=20,cmap='bwr')
```
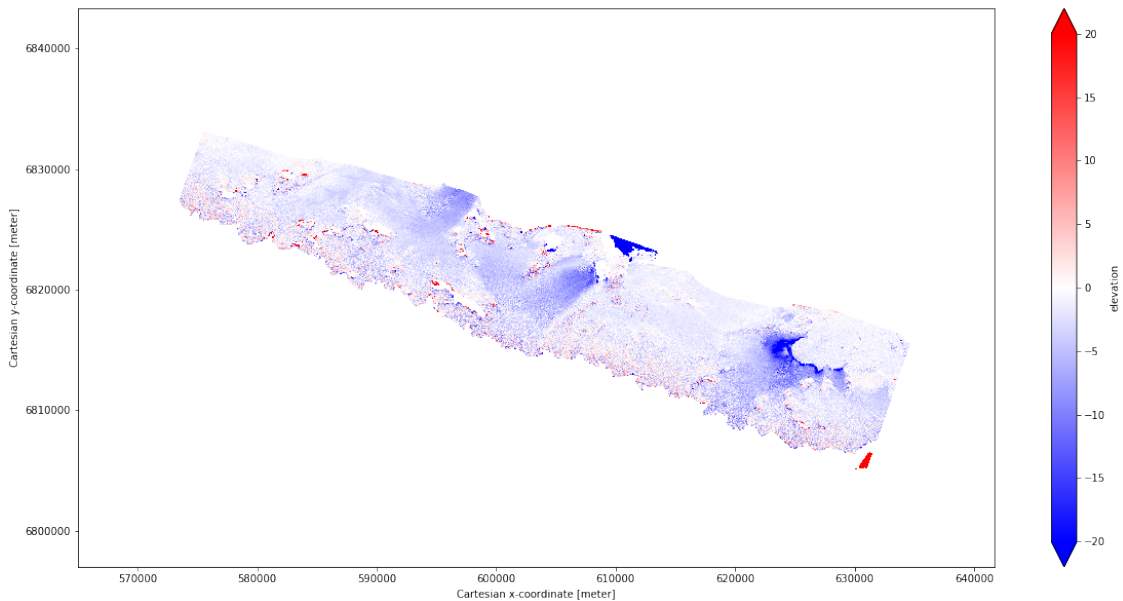
[7]: `<matplotlib.collections.QuadMesh at 0x107e59940>`

1.0.2   2017 - 2016

```
[8]: plt.figure(figsize=(20,10))
     (G[2].elevation - G[1].elevation).plot(vmin=-20,vmax=20,cmap='bwr')
```

[8]: <matplotlib.collections.QuadMesh at 0x1072d95f8>

2   Swath 006

```
[9]: grd_dir = '/Users/ifenty/Documents/Work/My Projects/2019_omg_intern_tmp/006/
     ↪006_greenl_mine_t003_r015c/006_greenl_34803_greenl_34806_netCDF'
     g = glob.glob(grd_dir + '/*nc')

     G = list()
     for gi in g:
         print (gi)
         G.append(xr.open_dataset(gi))

     for gi in G:
         print (gi.x)
```

/Users/ifenty/Documents/Work/My Projects/2019_omg_intern_tmp/006/006_greenl_mine
_t003_r015c/006_greenl_34803_greenl_34806_netCDF/15m_greenl_34803_16028_003_1603
22_ALTTBB_HH_03testing3.nc
/Users/ifenty/Documents/Work/My Projects/2019_omg_intern_tmp/006/006_greenl_mine
_t003_r015c/006_greenl_34803_greenl_34806_netCDF/15m_greenl_34806_17028_003_1703
11_ALTTBB_HH_04testing3.nc

```
/Users/ifenty/Documents/Work/My Projects/2019_omg_intern_tmp/006/006_greenl_mine
_t003_r015c/006_greenl_34803_greenl_34806_netCDF/15m_greenl_34806_18010_019_1803
08_ALTTBB_HH_01testing3.nc
<xarray.DataArray 'x' (x: 2254)>
array([580007.5, 580022.5, 580037.5, ..., 613772.5, 613787.5, 613802.5])
Coordinates:
  * x        (x) float64 5.8e+05 5.8e+05 5.8e+05 ... 6.138e+05 6.138e+05
Attributes:
    units:                 meter
    long_name:             Cartesian x-coordinate
    coverage_content_type: coordinate
    standard_name:         projection_x_coordinate
    axis:                  X
    valid_range:           [580007.5 613802.5]
<xarray.DataArray 'x' (x: 2254)>
array([580007.5, 580022.5, 580037.5, ..., 613772.5, 613787.5, 613802.5])
Coordinates:
  * x        (x) float64 5.8e+05 5.8e+05 5.8e+05 ... 6.138e+05 6.138e+05
Attributes:
    units:                 meter
    long_name:             Cartesian x-coordinate
    coverage_content_type: coordinate
    standard_name:         projection_x_coordinate
    axis:                  X
    valid_range:           [580007.5 613802.5]
<xarray.DataArray 'x' (x: 2254)>
array([580007.5, 580022.5, 580037.5, ..., 613772.5, 613787.5, 613802.5])
Coordinates:
  * x        (x) float64 5.8e+05 5.8e+05 5.8e+05 ... 6.138e+05 6.138e+05
Attributes:
    units:                 meter
    long_name:             Cartesian x-coordinate
    coverage_content_type: coordinate
    standard_name:         projection_x_coordinate
    axis:                  X
    valid_range:           [580007.5 613802.5]
```
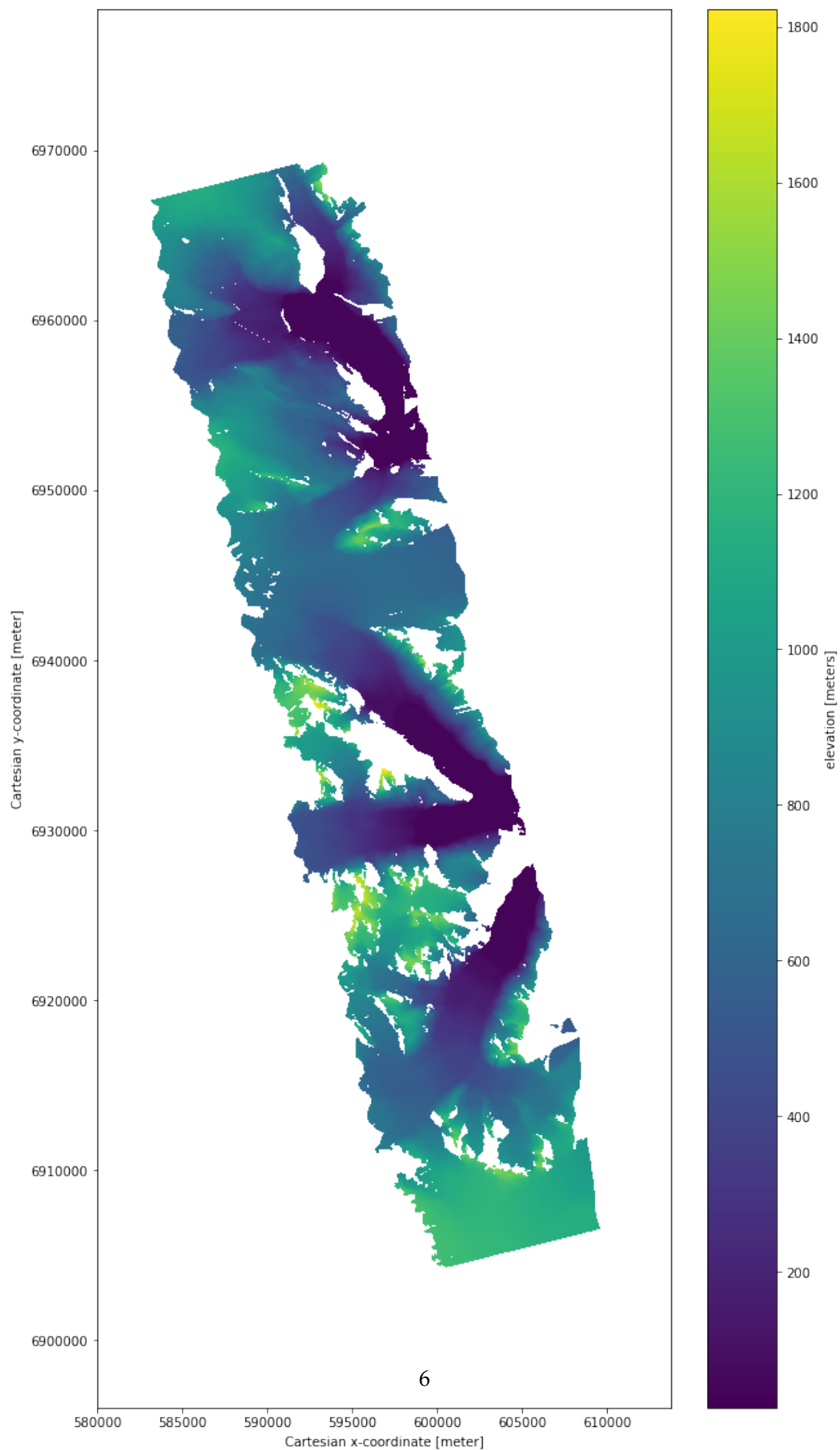
[18]:
```python
plt.figure(figsize=(10,20))
(G[2].elevation.plot())
```
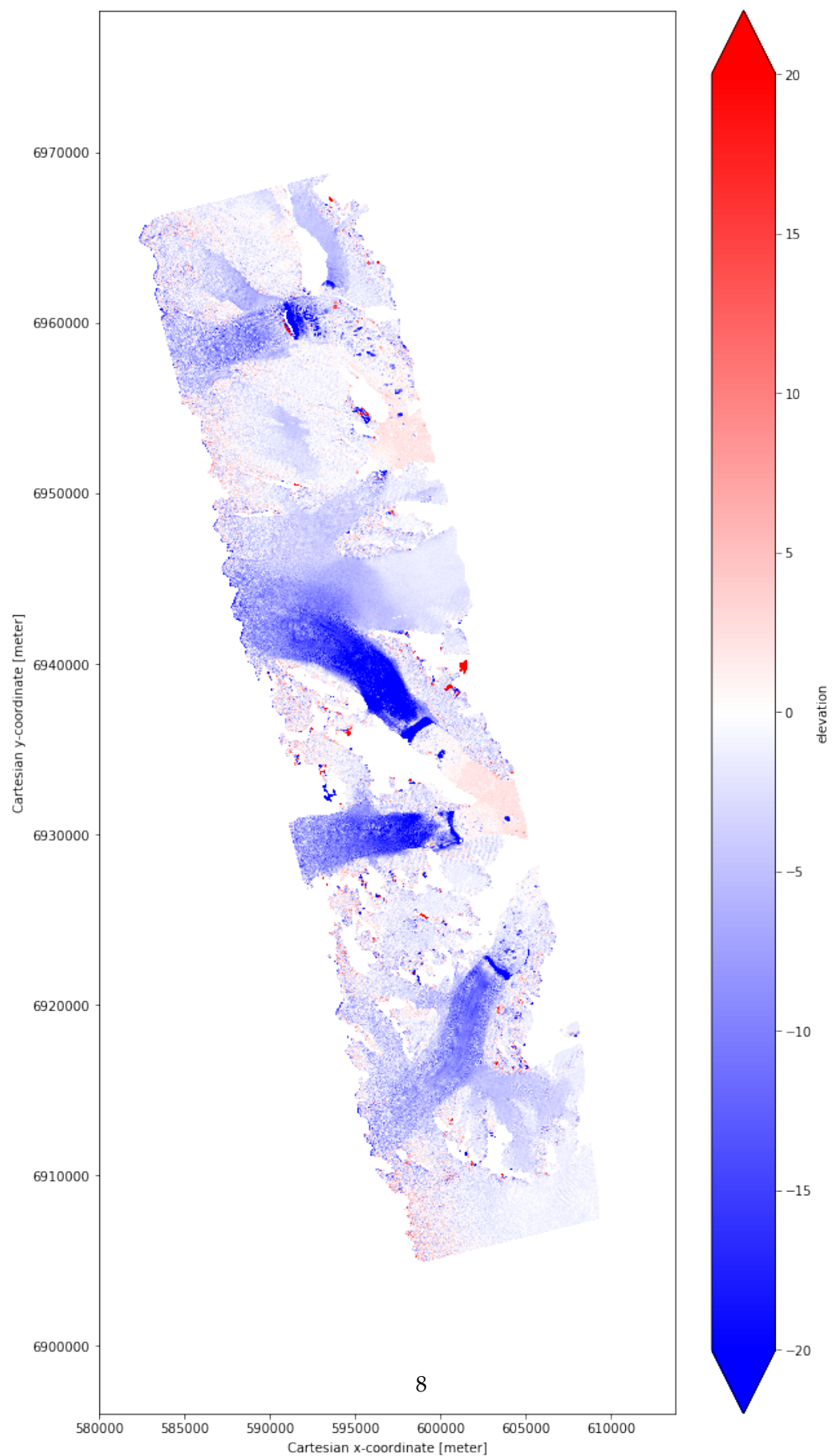
[18]: <matplotlib.collections.QuadMesh at 0x158209208>

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2.0.1 2018 - 2017

```
[13]: plt.figure(figsize=(10,20))
      (G[1].elevation - G[0].elevation).plot(vmin=-20,vmax=20,cmap='bwr')
```

```
[13]: <matplotlib.collections.QuadMesh at 0x1542c5588>
```
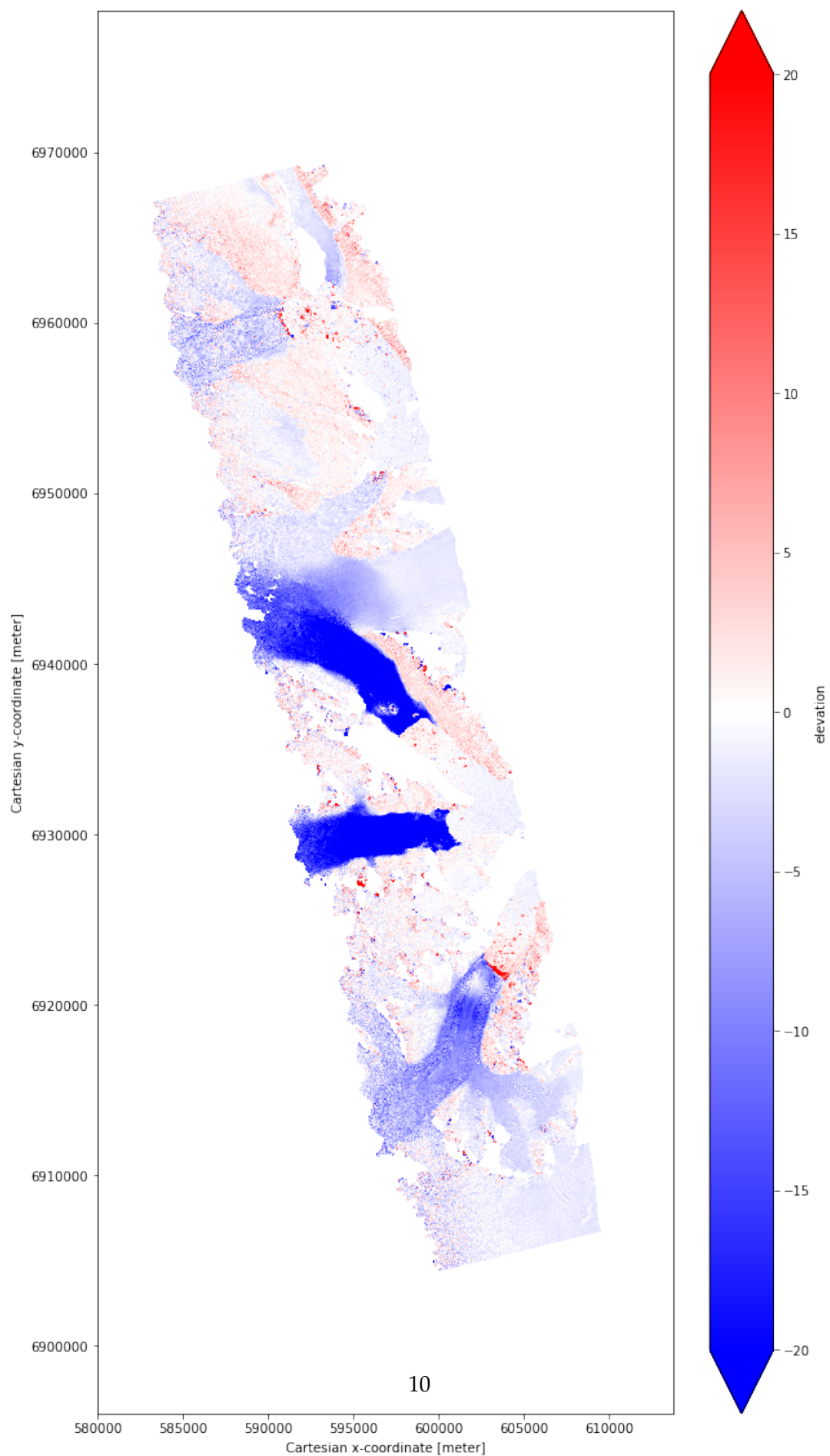
2.0.2 2017- 2016

```
[14]: plt.figure(figsize=(10,20))
      (G[2].elevation - G[1].elevation).plot(vmin=-20,vmax=20,cmap='bwr')
```

```
[14]: <matplotlib.collections.QuadMesh at 0x153de2908>
```

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[ ]: