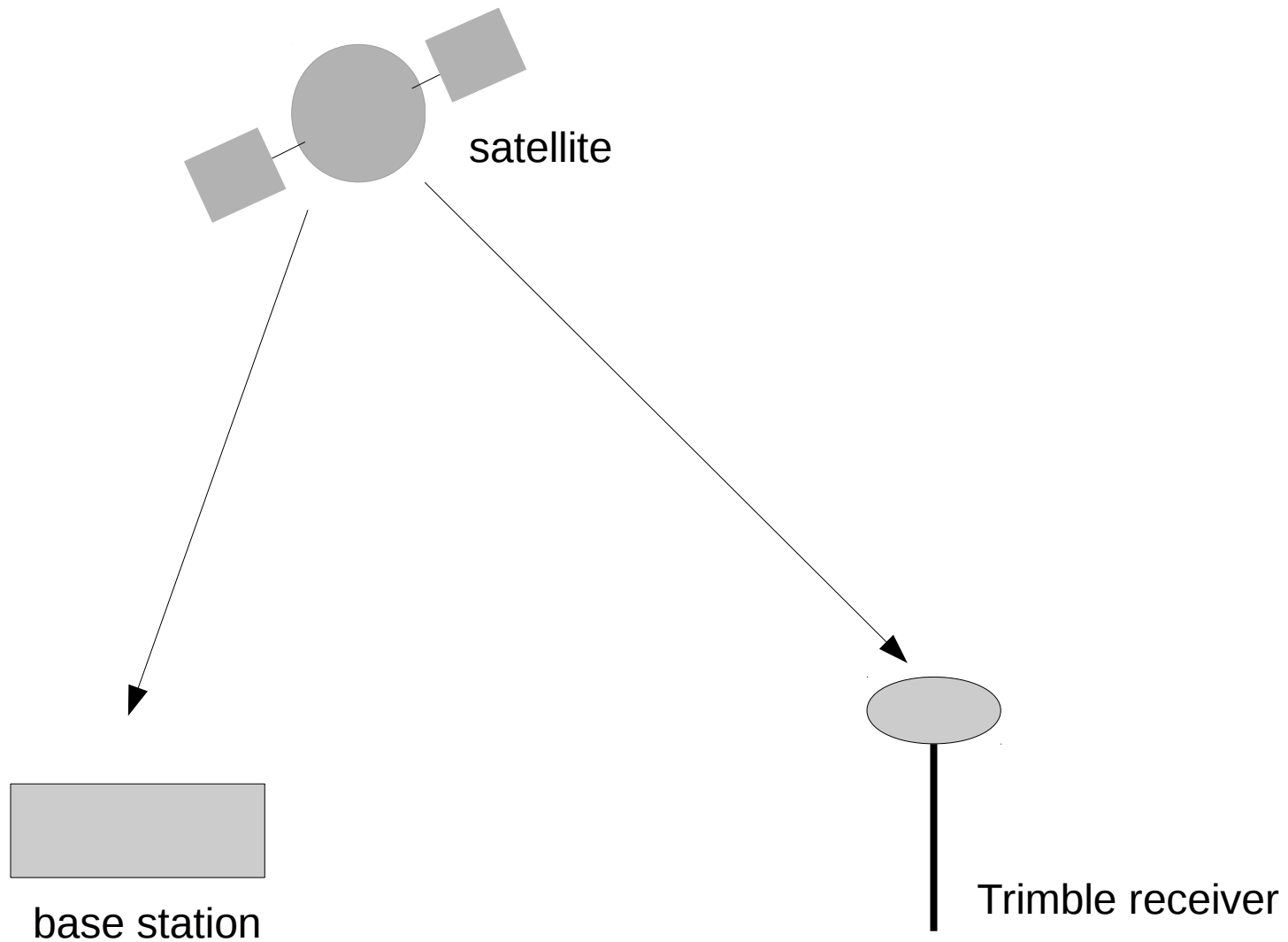


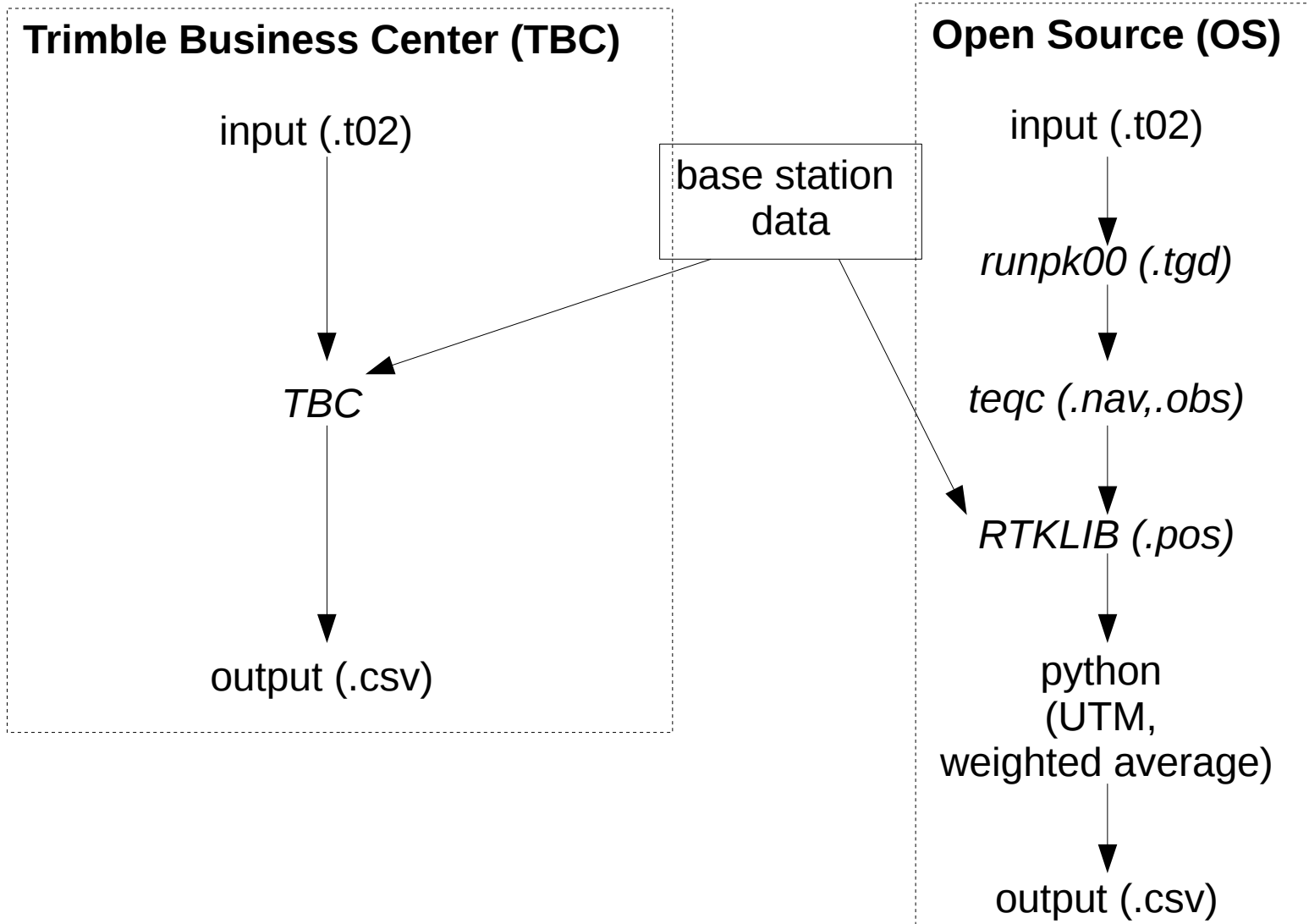


# Methods & Processing

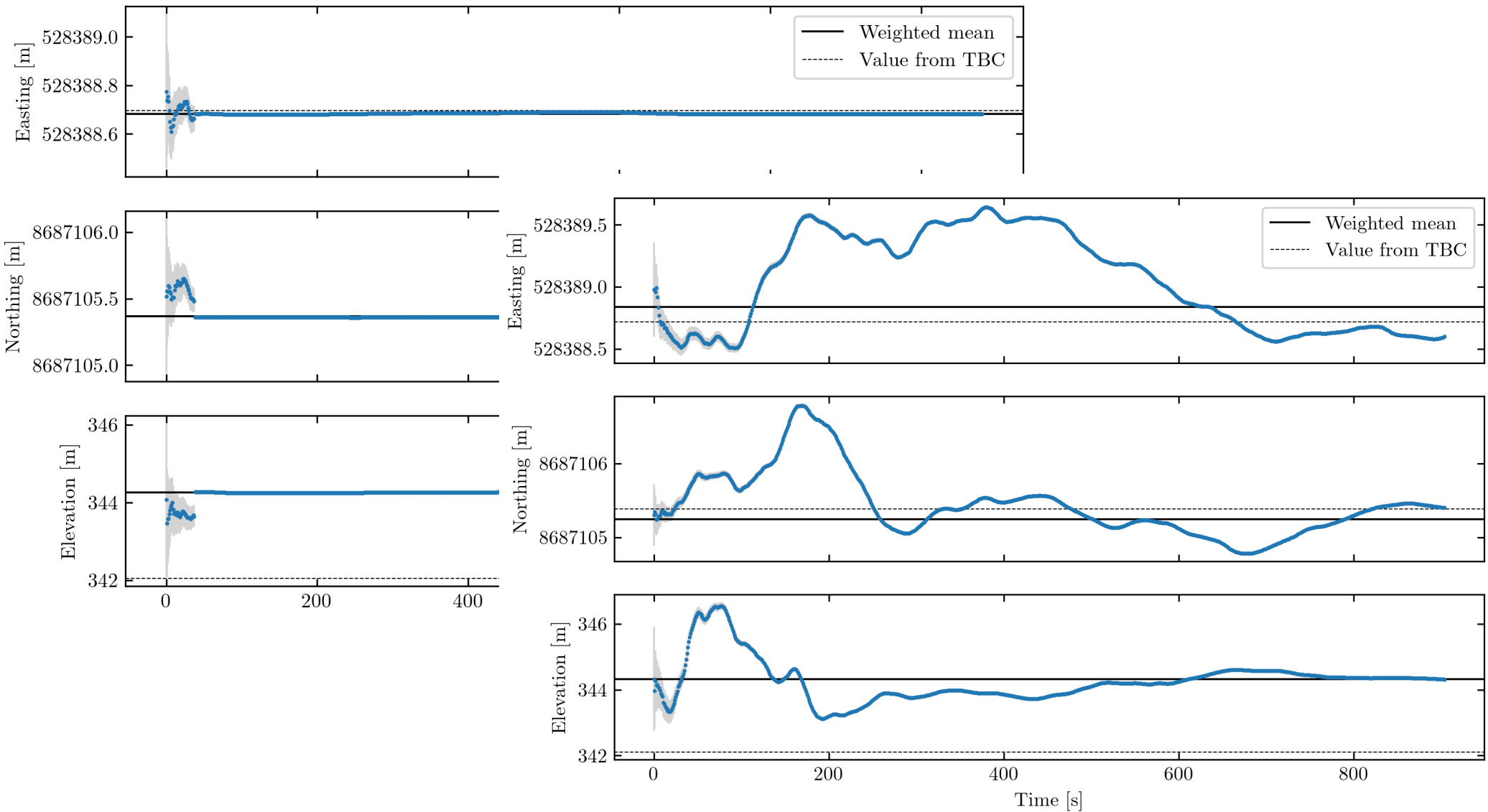
# differential GPS



# Post processing - 2 methods



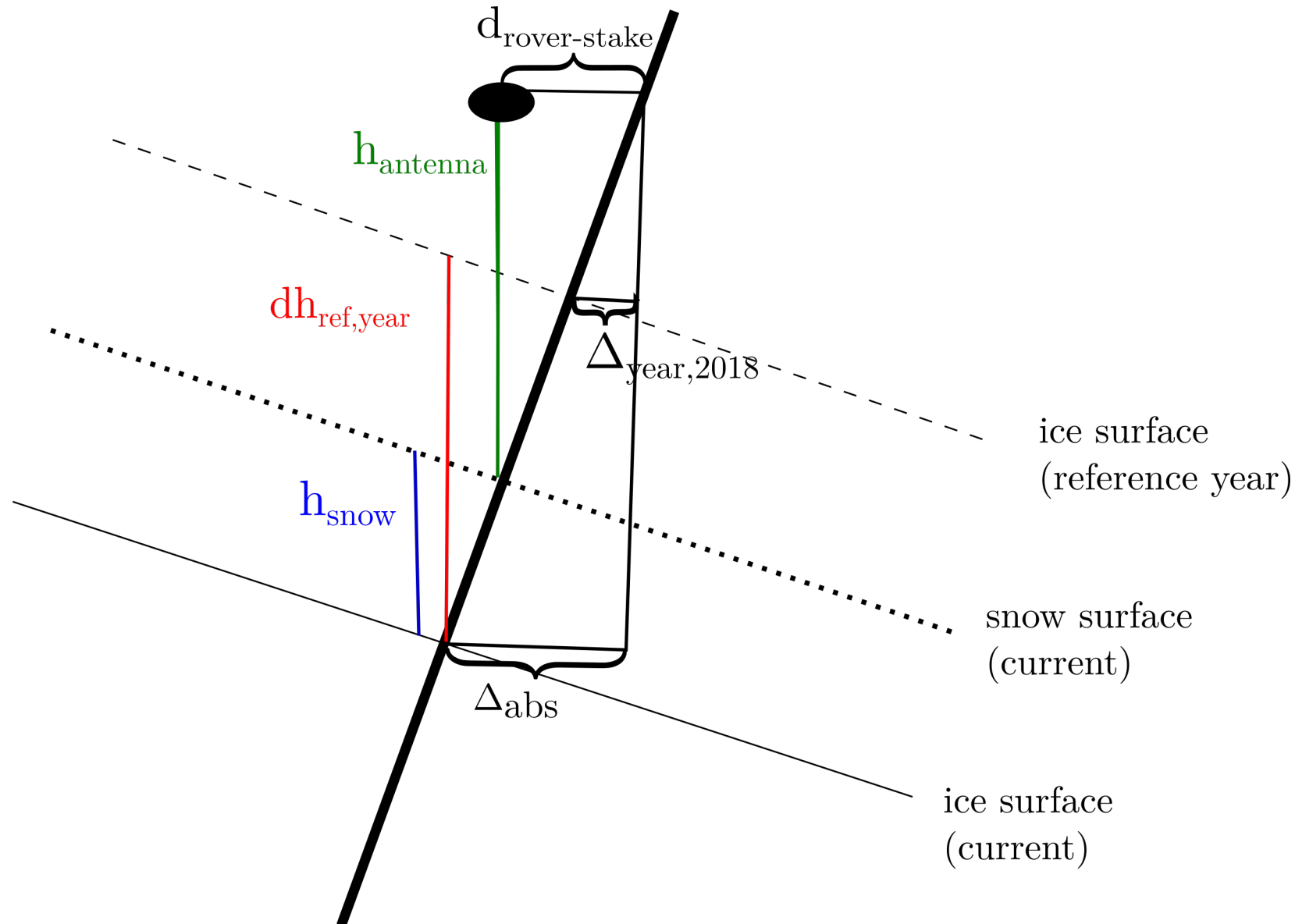
# time series: OS



# OS as replacement for TBC?

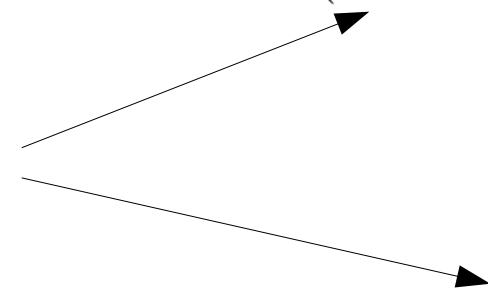
	<b>Northing [m]</b>	<b>Easting [m]</b>	<b>Elevation [m]</b>
<b>Mean Difference</b>	0.09	0.05	0.24
<b>Median Difference</b>	0.01	0.01	0.07

# Stake correction



# stake correction

## horizontal

$$\Delta_{\text{abs}} = (h_{\text{snow}} + h_{\text{antenna}}) * \sin(\alpha)$$


The diagram shows two arrows originating from the right side of the  $\Delta_{\text{abs}}$  equation. One arrow points diagonally upwards and to the right towards the  $\Delta_{\text{north}}$  equation. The other arrow points diagonally downwards and to the right towards the  $\Delta_{\text{east}}$  equation.

$$\Delta_{\text{north}} = -(\Delta_{\text{abs}} * \cos(\phi)) - d_{\text{rover-stake}}$$
$$\Delta_{\text{east}} = -\Delta_{\text{abs}} * \sin(\phi)$$

## vertical

$$\Delta_{\text{elev,TBC}} = -h_{\text{snow}}$$

$$\Delta_{\text{elev,os}} = -(h_{\text{snow}} + h_{\text{antenna}})$$

# Final stake positions

Name	Northing [m]	Easting [m]	Elevation [m]
BL2-2016	8686150.74 $\pm$ 0.16	523049.41 $\pm$ 0.11	436.89 $\pm$ 0.48
BL2-2018	8686149.82 $\pm$ 0.02	523051.47 $\pm$ 0.03	437.74 $\pm$ 0.06
BL3-2016	8686091.51 $\pm$ 0.27	523544.75 $\pm$ 0.13	490.82 $\pm$ 0.25
BL3-2018	8686091.17 $\pm$ 0.42	523545.34 $\pm$ 0.10	491.39 $\pm$ 1.03
BL4-2018	8686098.89 $\pm$ 0.21	524181.02 $\pm$ 0.20	570.94 $\pm$ 0.20
BL4-i-2016	8686098.47 $\pm$ 0.27	524179.80 $\pm$ 0.19	571.65 $\pm$ 0.20
BL4-ii-2016	8686098.39 $\pm$ 1.30	524179.92 $\pm$ 0.31	571.36 $\pm$ 4.82
BL5-i-2017	8686130.74 $\pm$ 0.09	524644.27 $\pm$ 0.01	628.63 $\pm$ 0.09
BL5-ii-2017	8686130.74 $\pm$ 0.28	524644.28 $\pm$ 0.15	628.56 $\pm$ 0.75
T1-2018	8687106.55 $\pm$ 0.32	528388.42 $\pm$ 0.07	341.59 $\pm$ 0.24
T1-i-2017	8687105.69 $\pm$ 0.13	528388.68 $\pm$ 0.18	341.26 $\pm$ 0.12
T1-ii-2017	8687105.58 $\pm$ 0.45	528388.84 $\pm$ 0.44	341.38 $\pm$ 0.65
T2-2016	8687321.31 $\pm$ 0.42	527951.88 $\pm$ 0.14	394.88 $\pm$ 2.34
T2-2018	8687319.62 $\pm$ 0.28	527951.35 $\pm$ 0.27	395.86 $\pm$ 1.61