**Elevation change of Fedchenko Glacier, Pamir Mountains, from GNSS field measurements and TanDEM-X elevation models, with a focus on the upper glacier**

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SUPPLEMENTARY MATERIAL

Figures S1 to S3 show backscatter maps for the TanDEM-X acquisitions used in the paper. Backscatter coefficients are calibrated and account for different viewing geometries. Low backscatter areas on the glacier (dark areas) indicate dominant surface scattering and strong absorption due to a wet surface (Mätzler, 1987), while high backscatter (bright areas) in the accumulation zone is a sign of penetration.

*Figure S1 near here*

*Figure S2 near here*

*Figure S3 near here*

**Fig. S1.** Backscattering coefficient σ0 for the TanDEM-X autumn acquisitions of the following dates (left 20110907, right: 20131031)

**Fig. S2.** Backscattering coefficient σ0 for the TanDEM-X autumn acquisitions of the following dates (left 20140911, right: 20151005)

**Fig. S3.** Backscattering coefficient σ0 for the TanDEM-X autumn acquisitions of the following dates (left 20160910, right: 20161111)