Supplementary Information for "Global L-band equivalent AI-based vegetation optical depth dataset"

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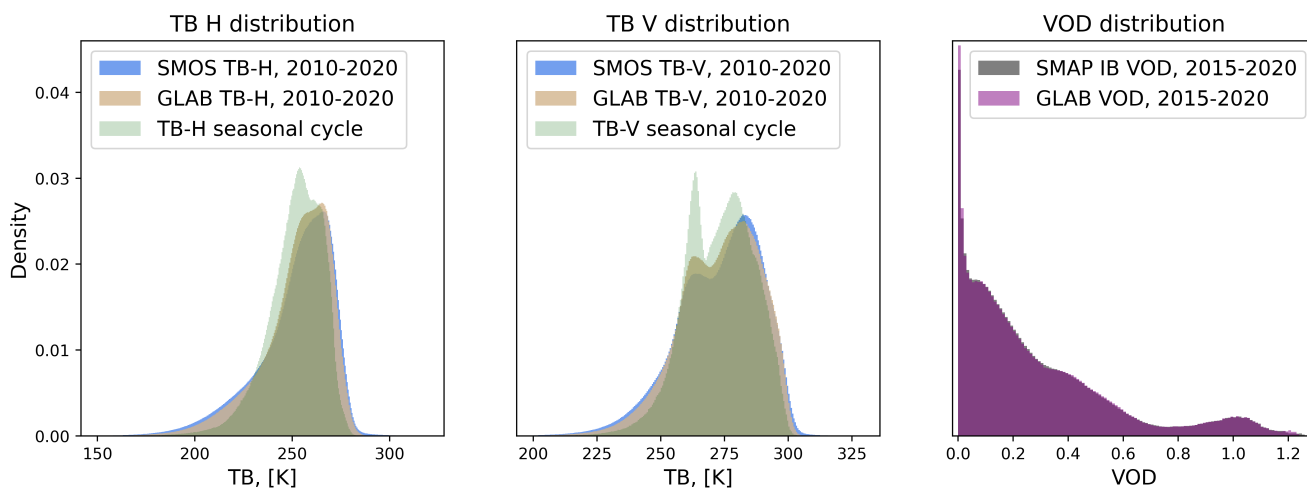Corresponding author: Olya Skulovich (os2328@columbia.edu)

Figure S1. Distribution comparison for GLAB-TB in horizontal and vertical polarization and GLAB-VOD products vs. target datasets – SMOS TB and SMAP-IB VOD.
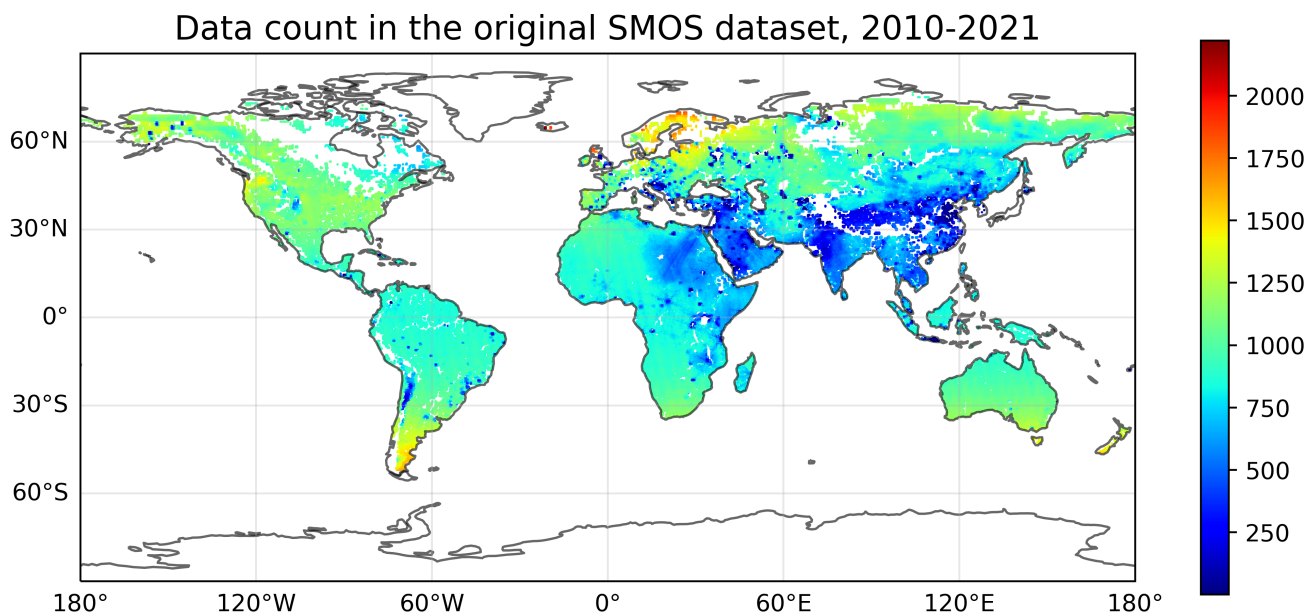

Figure S2. Number of available data points in SMOS dataset after removing RFI-affected data
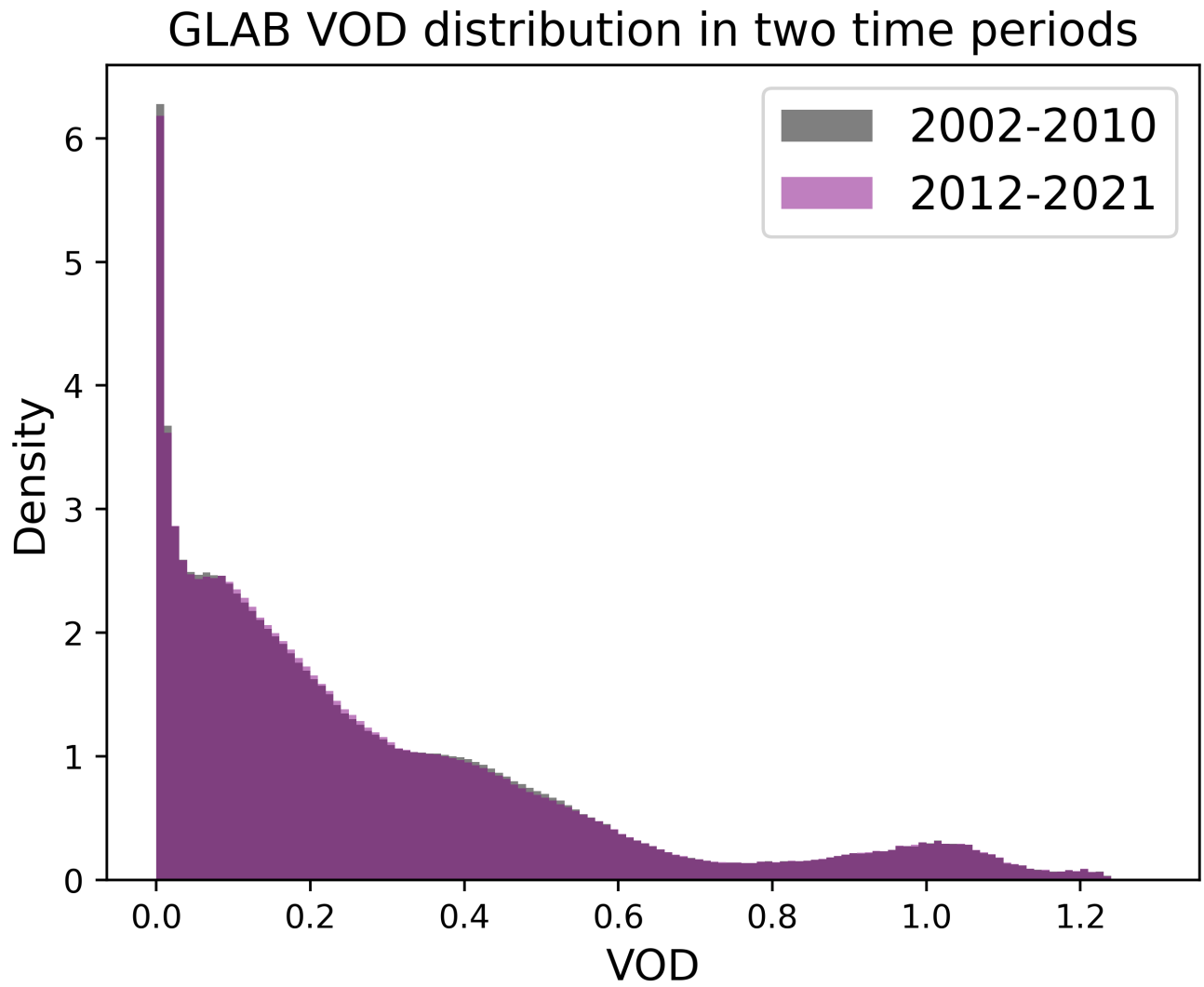
Figure S3. Comparing GLAB-VOD distribution in 2002-2010 vs. 2012-2020 to check for inconsistencies related to NN inputs from different sources.
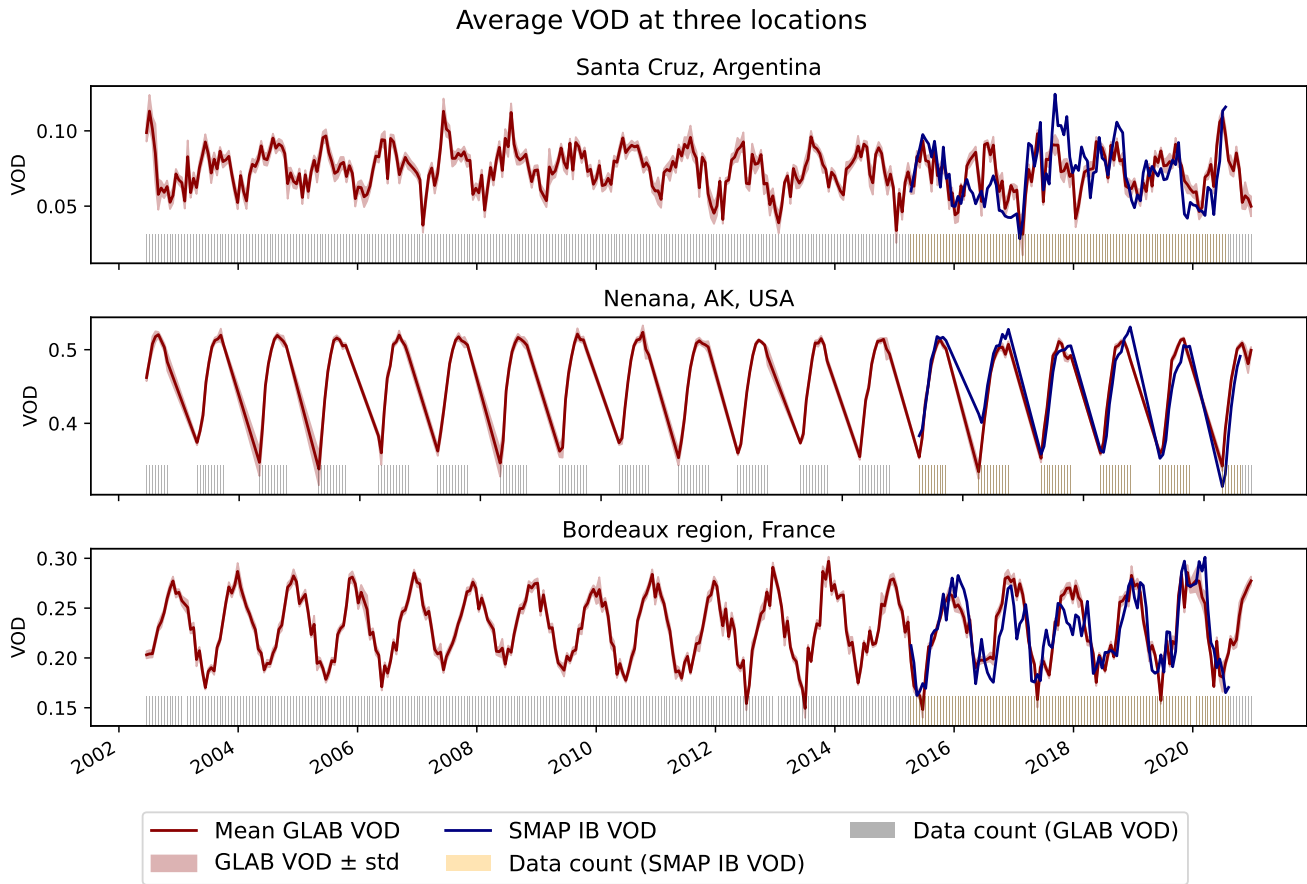
Figure S4. Averaged GLAB-VOD time series with uncertainty defined as one standard deviation from NN ensemble mean with SMAP-IB VOD in 2015-2020 for comparison for three individual locations: Santa Cruz region, Argentina (-50.049, -69.899), Nenana region, AK, USA (64.913, -152.896), and Bordeaux region, France (44.589, 0.389). Vertical lines indicate data count. Note the gaps in the measurements for the high latitude location.
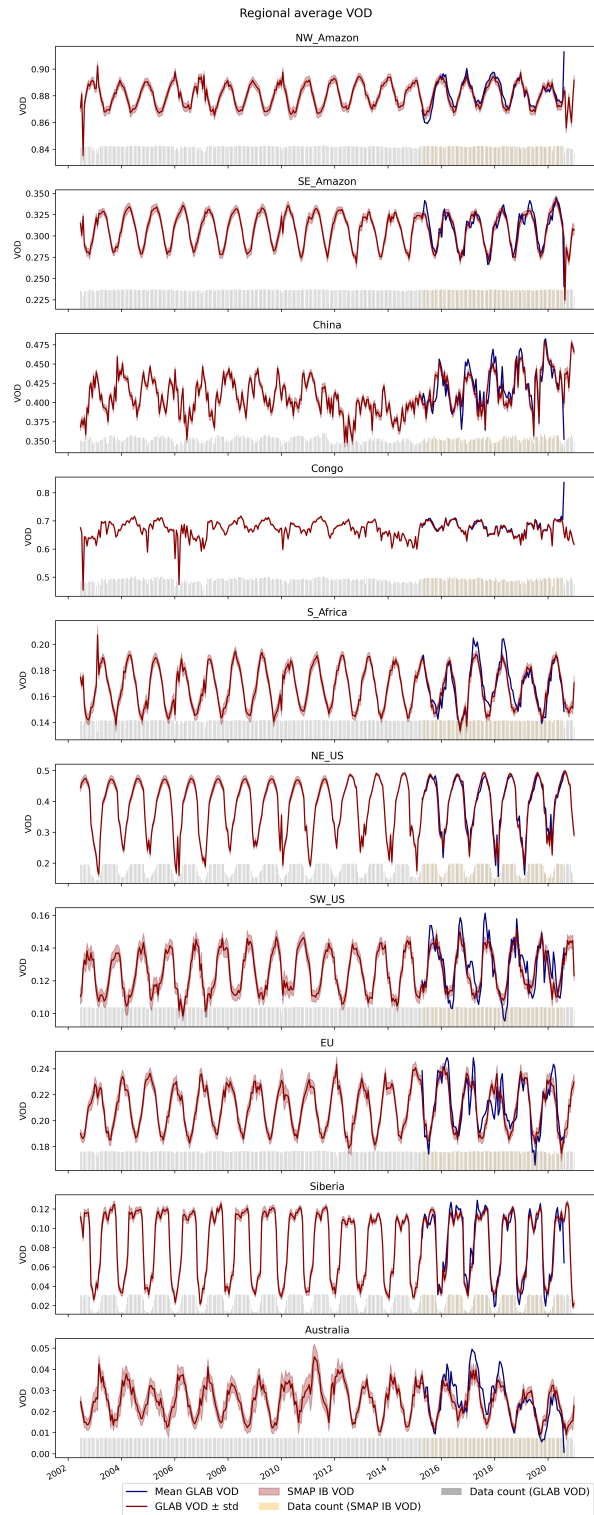
Figure S5. Averaged GLAB-VOD time series with uncertainty defined as one standard deviation from NN ensemble mean with SMAP-IB VOD in 2015-2020 for comparison for ten different geographical regions (See Fig. S6). Vertical lines indicate data count. Note the irregularities in the measurements, for example, for the high latitude regions in winter, and related to filtering out the RFI-contaminated data in China.
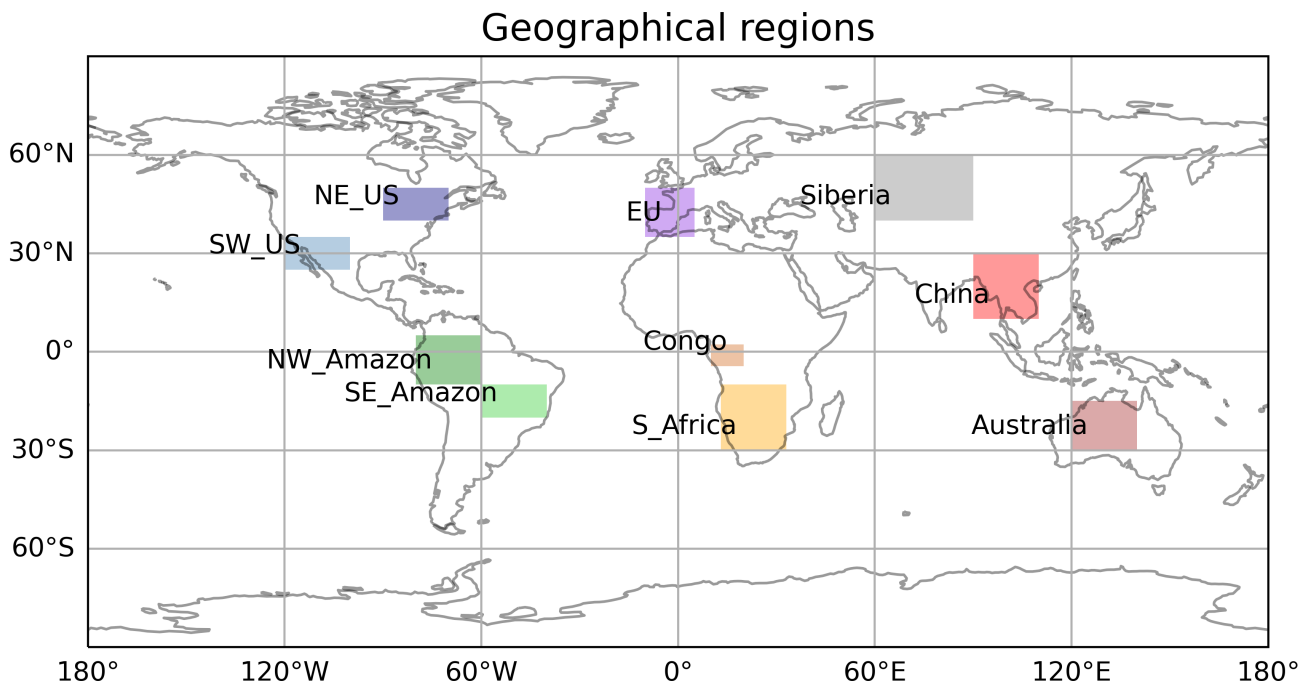
Figure S6. Geographical extent of the ten regions illustrated in Fig. S5. The boxes are defined by the following coordinates. 'NE_US' lat: 40 to 50°, lon: −90 to −70°; 'SW_US' lat: 25 to 35°, lon: −120 to −100°; 'NW_Amazon' lat: −10 to 5°, lon: −80 to −60°; 'SE_Amazon' lat: −20 to −10°, lon: −60 to −40°; 'EU' lat: 35 to 50°, lon: −10 to 5° ; 'Siberia' lat: 40 to 60°, lon: 60 to 90°; 'Congo' lat: −4.4 to 2.2°, lon: 10 to 20°; 'S_Africa' lat: −30 to −10°, lon: 10 to 33°; 'China' lat: 10 to 30°, lon: 90 to 110°; 'Australia' lat: −30 to −15°; lon: 120 to 140°.