Supplementary Material of

Estimation of the growing stock volume of forests with SAR-based models: A comparison of model fitting methods

by Santoro, M., Cartus, O., Antropov, O., Miettinen, J.

Figure and Table material cited in the manuscript

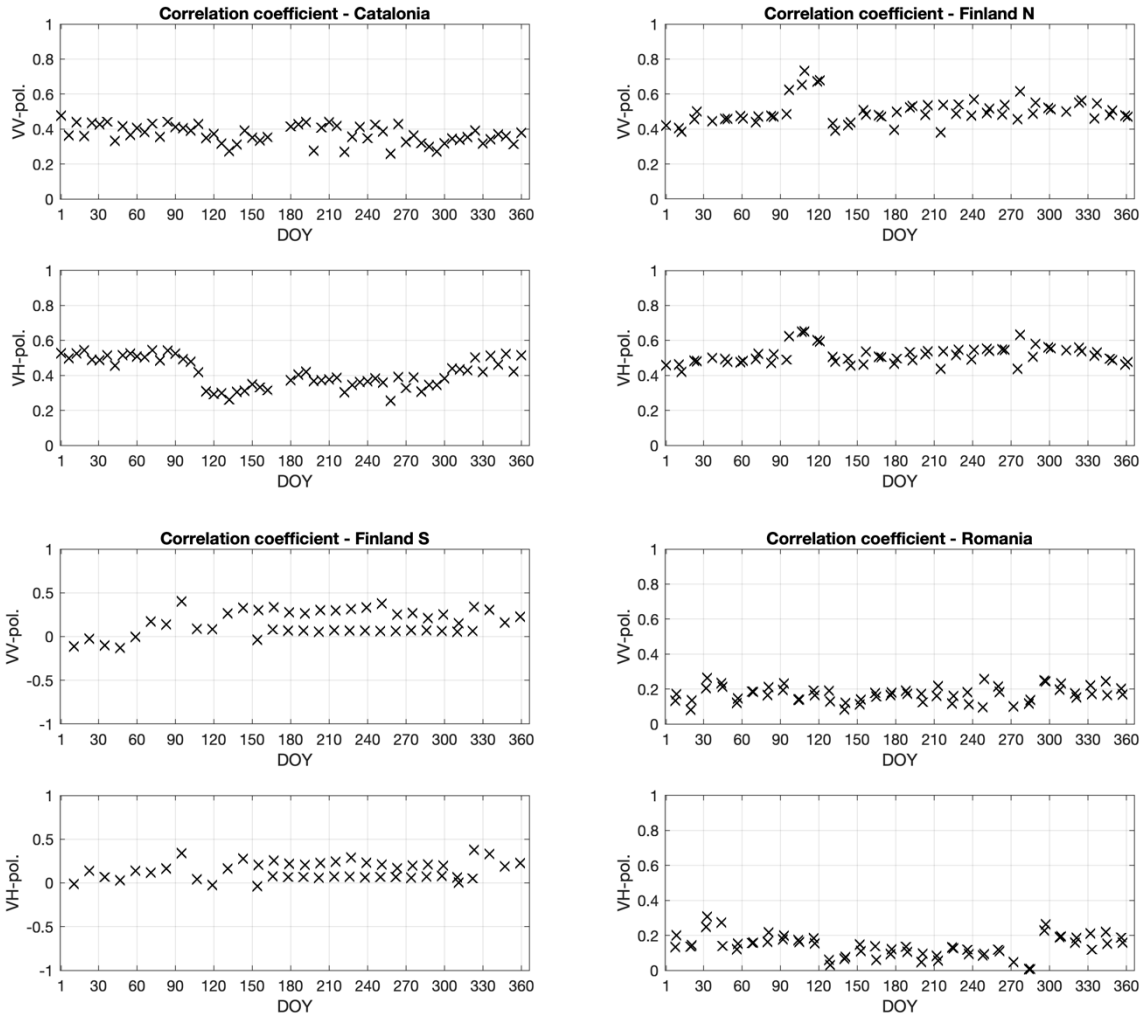


Figure S1. Pearson's correlation coefficient between the Sentinel-1 backscatter measurements and the plot measurements of GSV for each acquisition date, study site and polarization (DOY: day of year).

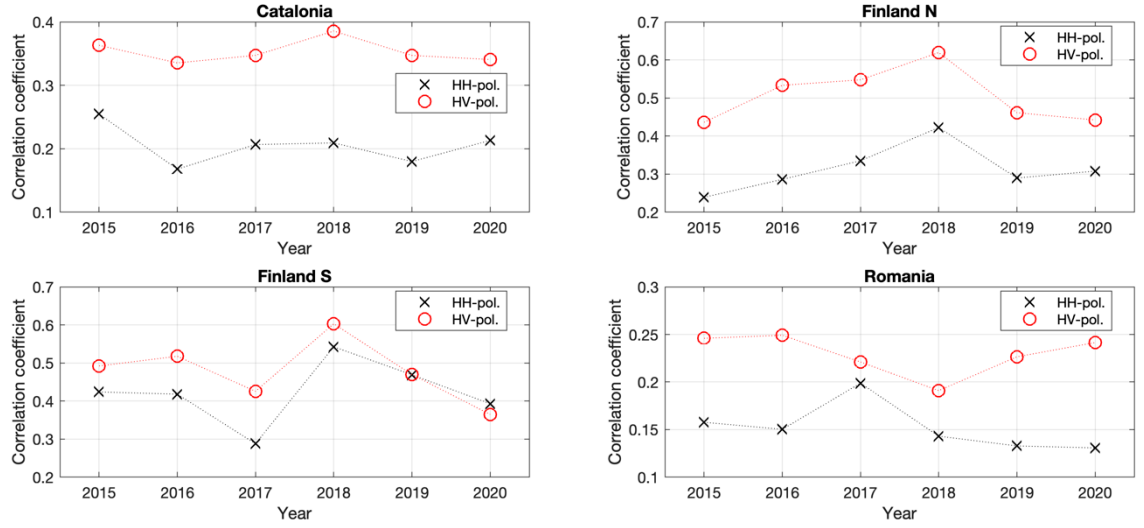


Figure S2. Pearson's correlation coefficient between the ALOS-2 PALSAR-2 backscatter measurements and the plot measurements of GSV for each year of the mosaics, study site and polarization.

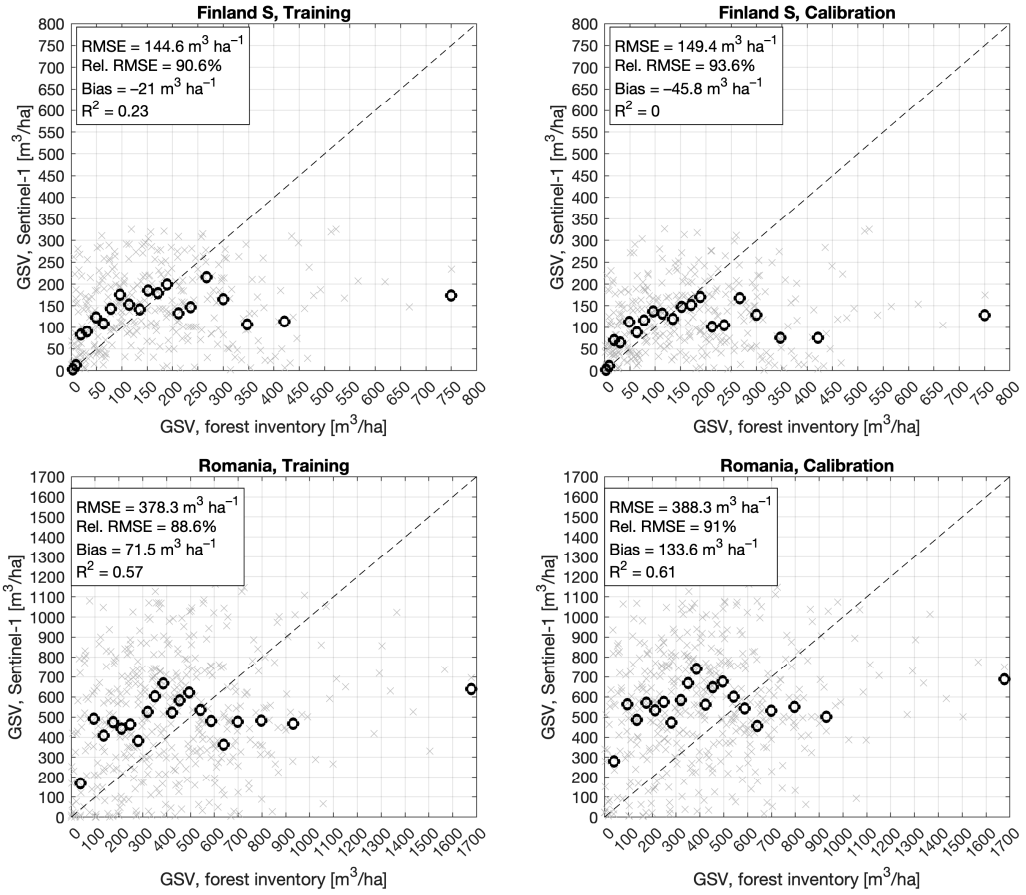


Figure S3 Comparison of GSV values estimated from the Sentinel-1 dataset and from field inventory for the sites of Finland S (top row) and Romania (bottom row). The SAR-based estimates were obtained with the WCM trained with field measurements (left panels) and with the calibrated WCM (right panels). Crosses refer to individual field plots. Circles represent the median value of the estimated GSV for 10 m³/ha large bins of reference GSV. The dashed line represents the identity line.

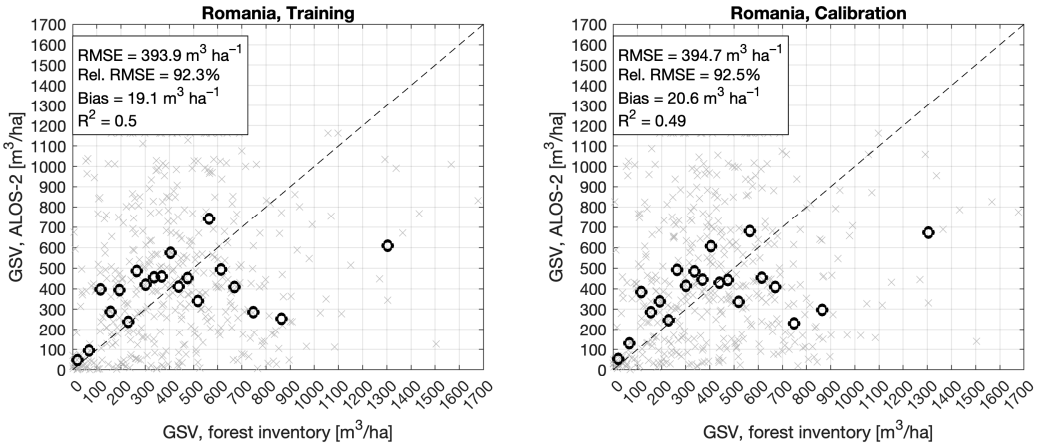


Figure S4. Same as in Figure S3 for PALSAR-2-based GSV estimates for the site of Romania.

Table S1. Details on NFI-derived GSV datasets for European countries.

Country	Year of inventory / publication	Variables	Source
Austria	2007-2009	GSV	https://www.waldinventur.at/#/
Belarus	2009	Volume and area	https://jukuri.luke.fi/bitstream/handle/10024/536079/mwp170.pdf;jsessionid=F5BD9152C29FF56B88174C0A3915C54D?sequence=1
Belgium	2008-2012 (W) 2009-2019 (F)	Volume and area GSV	http://iprfw.spw.wallonie.be/cy2-evolution.php (Wallonia) https://www.natuurenbos.be/vlaamse-bosinventaris/duurzaamgebruik.html (Flanders)
Bosnia	2011	Volume and area	http://www.fmpvs.gov.ba/texts/233_622_383_h.pdf (unavailable)
Croatia	2002-2011	GSV	(Čavlović, 2010; Čavlović et al., 2015)
Czech Republic	2001-2004	GSV	http://old.uhul.cz/en/il/NIL_AJ.pdf (unavailable)
Denmark	2020	GSV	https://static-curis.ku.dk/portal/files/283138747/Rapport_Skovstatistik_2020_web.pdf%20
Estonia	2015-2019	GSV	https://keskkonnaportaal.ee/sites/default/files/2021-12/Aastaraamat%20Mets%202019.pdf
Finland	2016-2020	GSV	https://www.luke.fi/en/statistics/about-statistics/statistics-database
France	2009-2013	GSV	https://inventaire-forestier.ign.fr/IMG/zip/RS_0913_RA.zip
Germany	2012	GSV	http://www.bundeswaldinventur.de
Hungary	2006	GSV	http://www.nebih.gov.hu/
Ireland	2017	Volume and area	https://wayback.archive-it.org/org-1444/20201125172921/https://www.agriculture.gov.ie/nfi/nfithirdcycle2017/nationalforestinventoryresultsdata2017/ / Chapter7GrowingStockVolume041120.xls and Chapter2Area041120.xls
Italy	2005	GSV	https://www.sian.it/inventarioforestale/caricaDocumento?idAlle=425 http://www.sian.it/inventarioforestale/jsp/dati_carquant_tab.jsp
Latvia	2011	Volume and area	http://www.vmd.gov.lv/valsts-meza-dienests/statiskas-lapas/publikacijas-un-statistika/meza-statistikas-cd?nid=1049#jump
Lithuania	2020	GSV	http://www.amvmt.lt/images/veikla/stat/miskustatistika/2020/02%20Misku%20ukio%20statistika%202020_m.pdf
Norway	2018	GSV	https://landsskog.nibio.no

Poland	2010-2014	GSV	https://www.bdl.lasy.gov.pl/portal/Media/Default/Publikacje/WISL-2010-2014.pdf
Portugal	2015	Volume and area	http://www2.icnf.pt/portal/florestas/ifn/ifn6
Romania	2013-2018	GSV	http://roifn.ro/site/rezultate-ifn-2//
Slovakia	2004-2005	GSV	http://www.forim.sk/index_soubory/Smelko_Seben_Bosela_Merganic_Jankovic_2008_en.pdf
Slovenia	2018-2019	GSV	http://www.zgs.si/obmocne_enote/tolmin/o_obmocju/index.html
Spain	2008-2012	Volume and area	https://www.miteco.gob.es/es/biodiversidad/temas/inventarios-nacionales/inventario-forestal-nacional/publicaciones.aspx
Sweden	2016-2020	GSV	https://www.slu.se/globalassets/ew/org/centrb/rt/dokument/skogsdata/skogsdata_2021_webb.pdf
Switzerland	2009-2017	GSV	http://www.lfi.ch/resultate/resultate-en.php?zigrNr=21&befundNr=96&invNr=350&auswNr=434&p=reg&regionNr=2&frmFnc=Show+results&prodNr=2&itNr=8604
Turkey	2019	Volume and area	https://www.ogm.gov.tr/en/e-library/official-statistics
United Kingdom	2009 and 2011	Volume and area	https://www.forestresearch.gov.uk/tools-and-resources/statistics/
Ukraine	2011	GSV	Original provincial statistics from Forest State Account

References

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Čavlović, J.; Božić, M.; Teslak, K.; Vedriš, M. 2015. Chapter 15 – Croatia. In: National Forest Inventories – Assessment of Wood Availability and Use; Vidal, C., Alberdi, I., Hernandez, L., Redmond, J.; Publisher: Springer International Publishing, pp. 281-305. ISBN 978-3-319-44015-6.