Supplementary materials for the paper "Characterizing the error and bias of remotely sensed LAI products: an example for tropical and subtropical evergreen forests in south China"

Table S1. Detailed forest community information in the southern China region.

Sites	Forests environments	Tree Height(m)	Diameter Breast Height(cm)	Stand density(N/hm^2)	Vertical canopy stratum	Dominant species
BNF	public and natural	25-40	4.7-7.4	3000-5000	Woody(three layer), shrub , herb and inter stratum plant	*Pometia tomentosa*、*Hevea brasiliensis*、 *Terminnalia myriocarpa, Barringtonia fusicarpa*、*Baccaurea ramiflora*、*Lageatroemia tomentosa*、*Beilschmiedia robusta*
HSF	public and planted(from 1983)	9-13	5-7.6	2000-4600	woody, shrub and herb	*Acacia mangium*、*Rhodomyrtus tomentosa*、*Pinus massoniana*、*Cunninghamia lanceolata* 、*Schima wallichii*、*Michelia macclurei*、*Ilex asprella var. asprella*
DHF	public natural and planted(from around 1954))	12-22	5-9	2300-5600	woody, shrub and herb	*Castanea henryi*、*Schima superba*、*Pinus massoniana*、*Aporusa yunnanensis*
ALF	public and natural	6-25	8-17	1200-7800	Woody(three layers), shrub, herb and inter stratum plant	*Lithocarpus hancei*、*Lithocarpus xylocarpus*、*Castanopsis wattii*、*Schima noronhae*、*Populus rotundifolia var. bonati*、*Alnus nepalensis*
GGF	public and natural	40	20.00	588	woody, shrub and herb	*Abies fabri*、*Rhododendron simsii*、*Sorbus pohuashanensis*
SNF	public and natural	25	8.70	4859	woody(three layers), shrub and herb	*Cyclobalanopsis glauca* 、*Rhododendron hypoglaucum* 、*Lithocarpus glaber*、*Quercus engleriana*

Table S2. The detailed information for field LAI measurements at each site.

Sites	Total measurements	Median monthly measurements	Years	Notes
ALF	258	20	2005, 2010, 2015	only certain growing season months available
BNF	4268	30	2005-2017	all months available
DHF	1309	80	2005, 2010, 2015	only certain growing season months available
HSF	1823	48	2005, 2006, 2010, 2015	only certain growing season months available
SNF	223	12	2010, 2015	only certain growing season months available
GGF	78	6	2005, 2010, 2015, 2016	only certain growing season months available

Table S3. Forest cover proportion at pixels of different LAI products.

sites	subplots	GEOV2 1km	GEOV3 300m	MODIS 500m
		Forest cover (%)	Forest cover (%)	Forest cover (%)
ALF	01	100	100	100
ALF	02	100	100	100
ALF	03	100	100	100
ALF	04	77	70	94
BNF	01	70	100	91
BNF	02	56	63	38
BNF	03	97	100	100
BNF	04	96	92	94
DHF	01	94	100	85
DHF	02	100	100	100
DHF	03	100	100	100
DHF	04	100	100	100
HSF	01	78	100	89
HSF	02	78	100	92
HSF	03	78	87	89

SNF	01	94	100	100

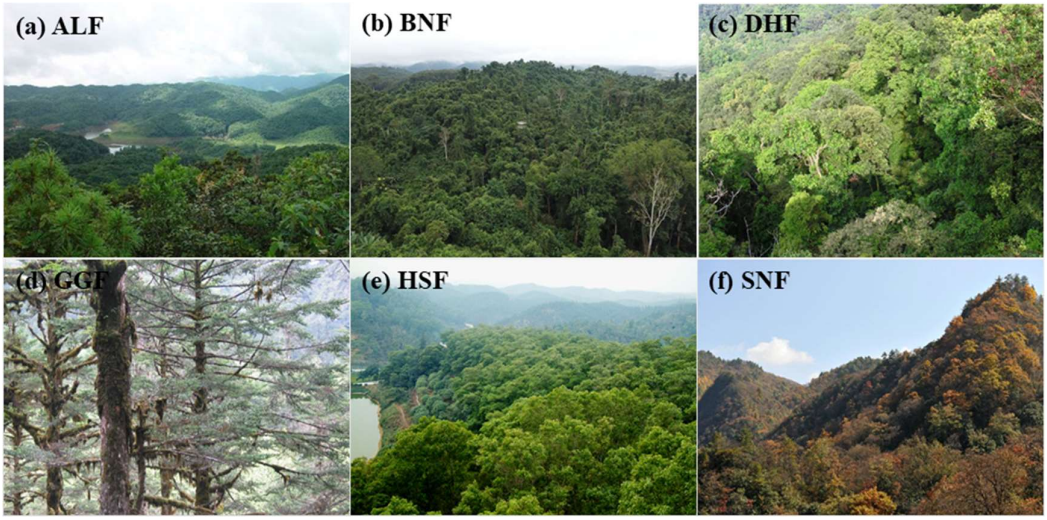

Figure S1. Forest appearance for each forest in this study in the southern China region. (a) ALF; (b) BNF; (c) DHF; (d) GGF; (e) HSF; (f) SNF.

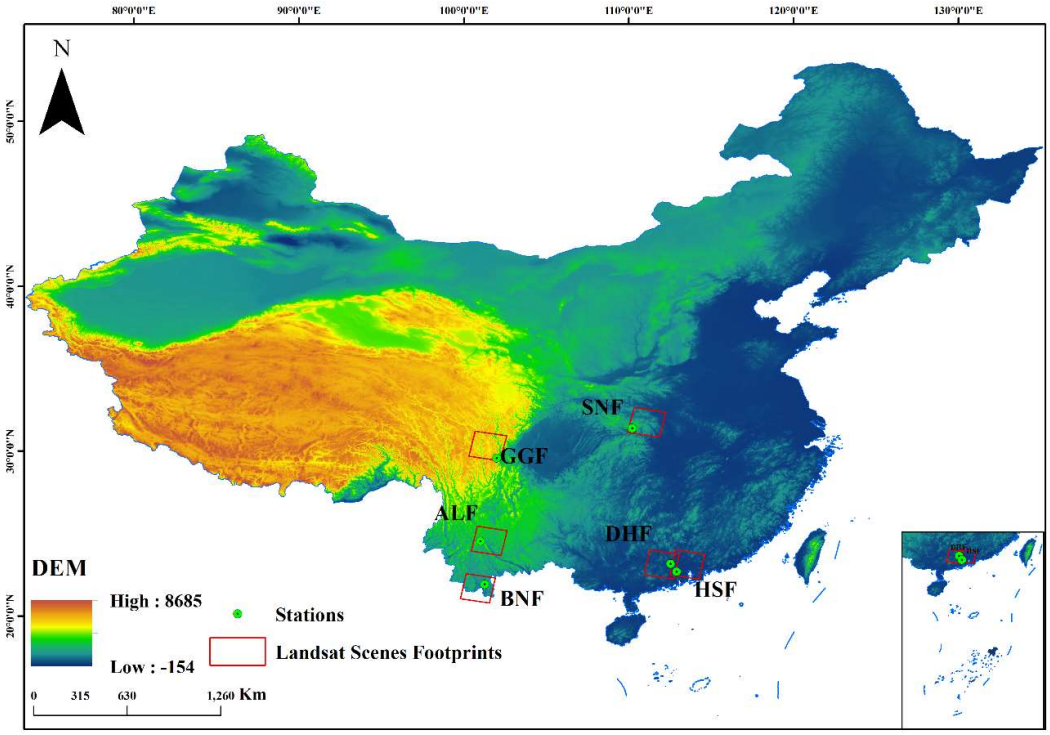

Figure S2. TOPO30 DEM (1km) in the China region. The studied sites (points) and footprints of the Landsat scenes (red boxes) used in the present study are also shown on the map.

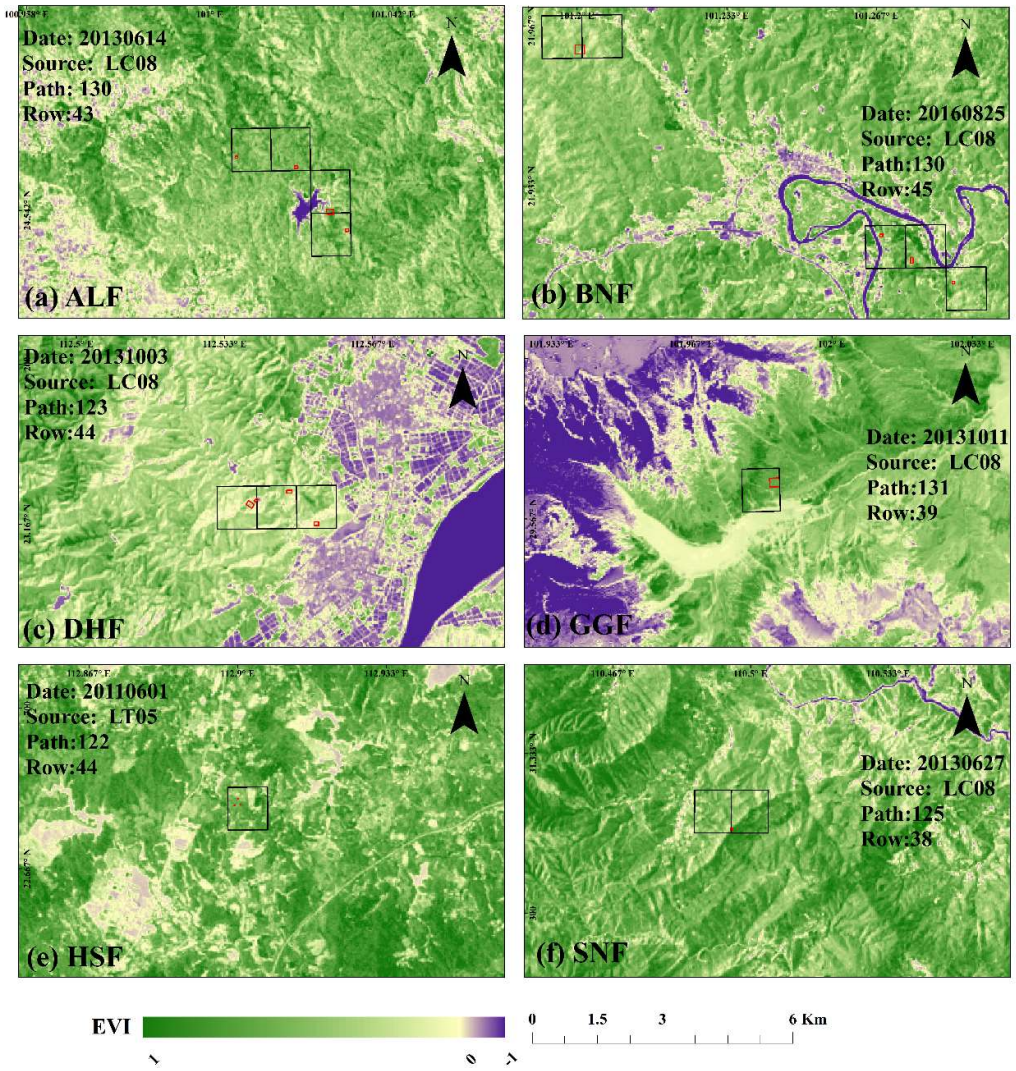

Figure S3. Location of the sampling subplots and the GEOV2 1km LAI pixels showed on the Landsat EVI scenes for different sites. (a) ALF; (b) BNF; (c) DHF; (d) GGF; (e) HSF; (f) SNF. Red boxes indicate the location of the sampling subplots and black boxes indicate the location of the 1km LAI pixels. The area of the sampling subplots ranged from 400 to10000m^2.

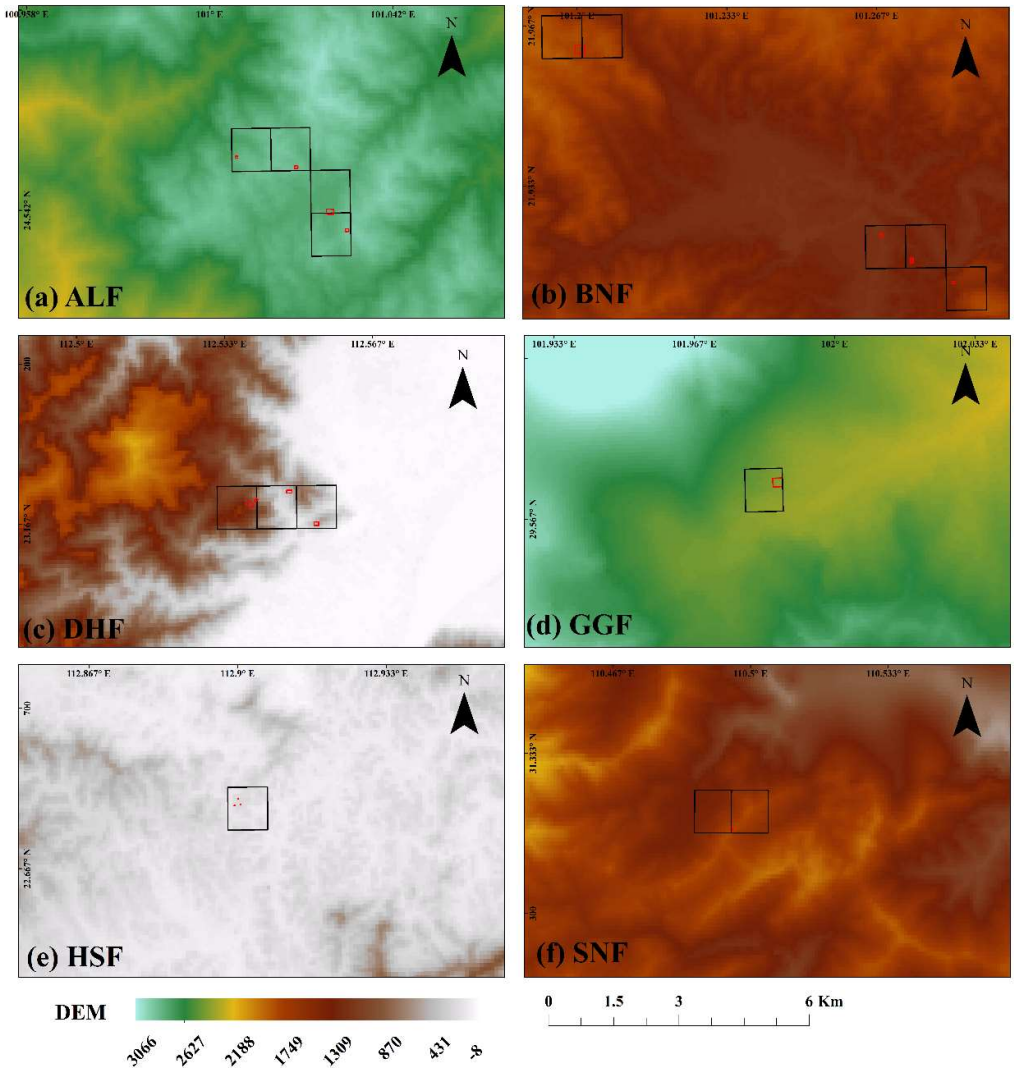

Figure S4. Location of the sampling subplots and the GEOV2 1km LAI pixels showed on the SARTM 90m DEM images for different sites. (a) ALF; (b) BNF; (c) DHF; (d) GGF; (e) HSF; (f) SNF. Red boxes indicate the location of the sampling subplots and black boxes indicate the location of the 1km LAI pixels. The area of the sampling subplots ranged from 400 to10000m^2.

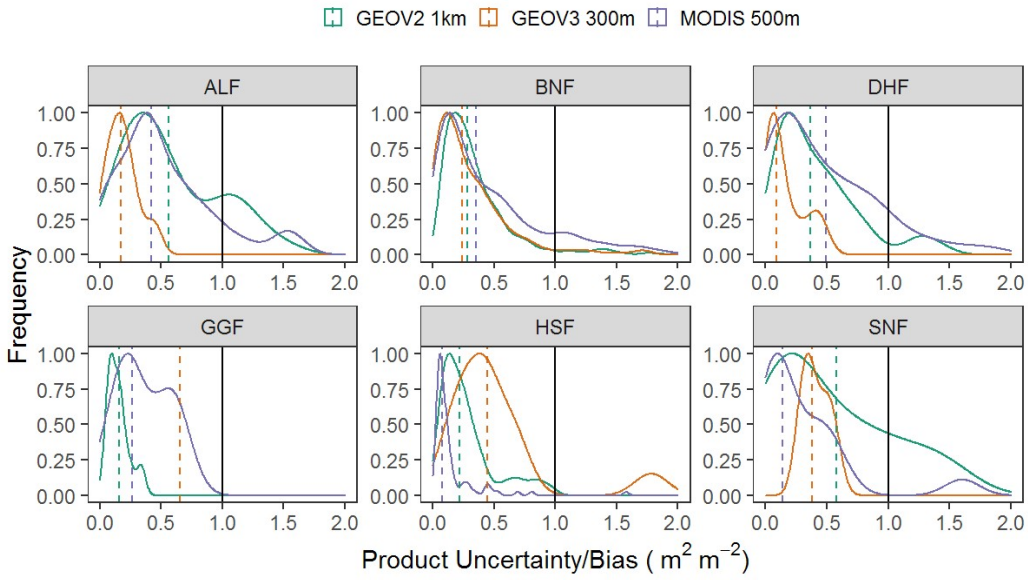

Figure S5. Distribution of the ratio of EO uncertainty estimates to bias, based on a comparison against in-situ LAI measurements. Dashed lines represent the median values and the color represents different EO products. The vertical black line is the reference line where the ratio is equal to 1. A ratio larger than 1 indicates uncertainty estimate is larger than bias and is therefore considered robust.

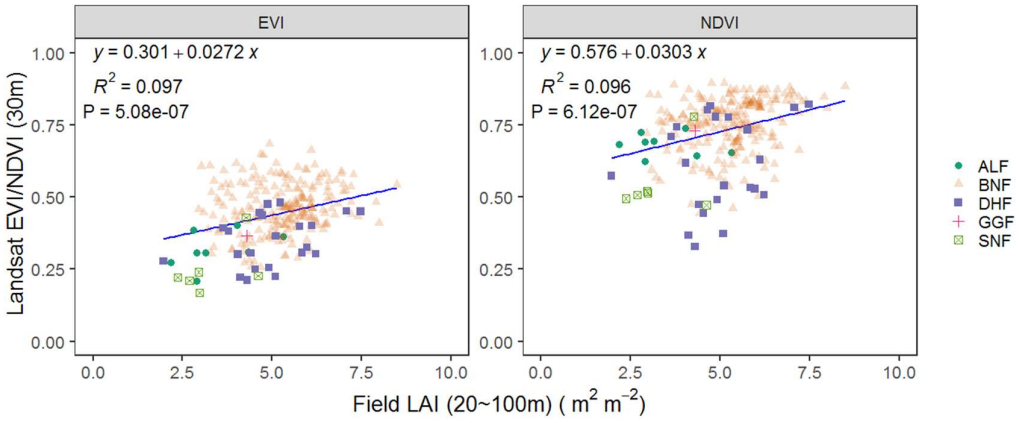

Figure S6. Regression analyses between the Landsat EVI/NDVI values and the field observed LAI values at sampling subplots.

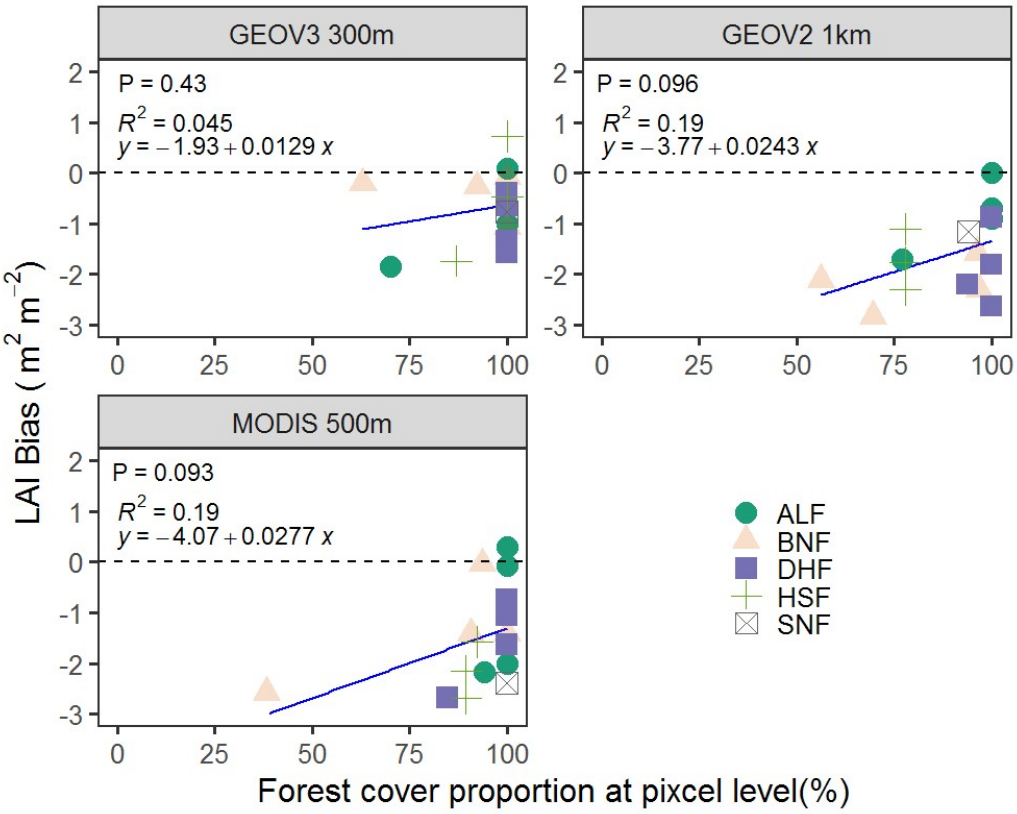

Figure S7. Regression analyses between the proportion of forests cover (LAI pixel level) and the remotely sensed LAI bias against the field measured LAI for different LAI products.

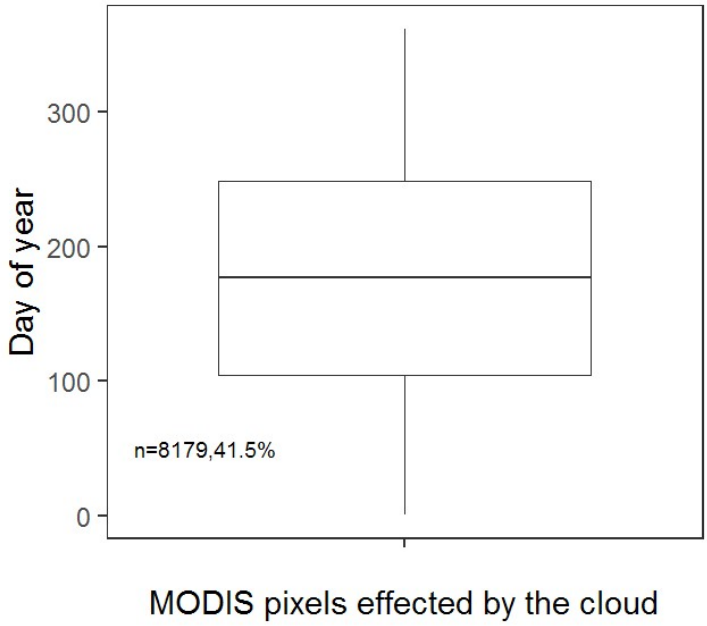

Figure S8. Summary of the dates for the MODIS LAI pixels which were influenced by the cloud in this study. The total count equal to 8179, accounted for about 41.5% of the total MODIS original LAI datasets used in this study.