AGU PUBLICATIONS

Global Biogeochemical Cycles

Supporting Information for

Understanding Interactions between Terrestrial Water and Carbon Cycles Using Integrated SMAP Soil Moisture and OCO-2 SIF Observations and Land Surface Models

Zhijiong Cao[1], Yongkang Xue[12]*, Hara Prasad Nayak[1], Dennis P. Lettenmaier[1], Christian Frankenberg[34], Philipp Köhler[5], and Ziwei Li[1].

[1]Department of Geography, University of California, Los Angeles, CA, USA.

[2]Department of Atmospheric and Oceanic Sciences, University of California, Los Angeles, CA, USA.

[3]Division of Geological and Planetary Sciences, California Institute of Technology, Pasadena, CA, USA.

[4]Jet Propulsion Laboratory, California Institute of Technology, Pasadena, CA, USA.

[5]Remote Sensing and Products Division at EUMETSAT, Darmstadt, Germany

Contents of this file

Tables S1 to S4

Introduction

This supporting information provides the ancillary tables mentioned in the article.

Table S1. Spatial Correlation Coefficient (SCC), Mean Bias (BIAS), and Root-Mean-Square Error (RMSE) of annual soil moisture simulations compared to SMAP L3 data, units: m^3/m^3.

	SSiB2/SIF	SSiB4/TRIFFID/SIF
SCC	0.849	0.831
BIAS	-0.037	-0.033
RMSE	0.076	0.076

Table S2. Descriptions for the vegetation types in SSiB4/TRIFFID/SIF

Type	Description
1	Evergreen broadleaf trees (EBT)
2	Needleleaf trees (NT)
3	C_3 grasses (C_3)
4	C_4 plants (C_4)
5	Shrubs (SH)
6	Tundra
7	Deciduous broadleaf trees (DBT)
8	Bare soil
9	Crops
10	Ice

Table S3. The original and new values of soil property parameters

	Original B parameter	New B parameter	Original K_s	New K_s	Original wilting point	New wilting point
EBT	7.12	10.0	2.0×10^{-5}	1.0×10^{-6}	5.85	8.35
NT	7.12	7.82	2.0×10^{-5}	1.0×10^{-5}	5.53	4.00
C_3	7.12	5.62	2.0×10^{-5}	2.0×10^{-4}	5.80	4.15
C_4	7.12	9.12	2.0×10^{-5}	1.0×10^{-5}	5.67	4.05
SH	4.05	6.80	1.8×10^{-4}	1.0×10^{-4}	5.01	4.00
DBT	7.12	10.0	2.0×10^{-5}	1.0×10^{-6}	5.57	4.10

Table S4. The original and new values of vegetation parameter, units: μmol/m^2/s

	Original V_{max}	New V_{max}
EBT	100	100
NT	60	30
C_3	60	30
C_4	30	30
SH	60	60
DBT	100	80