



Supplement of

Validation and assessment of satellite-based columnar CO₂ and CH₄ mixing ratios from GOSAT and OCO-2 satellites over India

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Supplement to article titled “Validation and assessment of satellite-based columnar CO₂ and CH₄ mixing-ratios from GOSAT and OCO-2 satellites over India” by Gadhavi et al.

Table S1: Sensitivity analysis of the impact of Step 3 (model-based filtering criteria) on the statistics of satellite and ground-based data pairing. The columns labeled “All 3 Steps” and “w/o Step 3” present comparison results with and without the application of Step 3, respectively.

			Num of Pairs		Bias (Sat – Grd)		Scatter	
			All 3-Steps	w/o Step 3	All 3-Steps	w/o Step 3	All 3-Steps	w/o Step 3
GOSAT	10x05	CH4	12	40	-0.013	-0.011	0.006	0.009
NIES								
GOSAT	20x10	CH4	19	97	-0.009	-0.011	0.012	0.011
NIES								
GOSAT	60x20	CH4	55	166	-0.019	-0.014	0.014	0.013
NIES								
GOSAT	10x05	CO2	27	40	0.983	0.684	1.587	1.518
NIES								
GOSAT	20x10	CO2	59	97	0.812	0.398	1.881	1.921
NIES								
GOSAT	60x20	CO2	117	166	0.644	0.196	1.698	1.326
NIES								
OCO-2	10x05	CO2	41	48	0.163	0.239	0.786	0.849
OCO-2	20x10	CO2	67	96	0.342	0.303	0.806	0.827
OCO-2	60x20	CO2	120	163	0.408	0.315	0.776	0.876
ACOS	10x05	CO2	24	37	-0.212	-0.357	1.019	1.139
ACOS	20x10	CO2	54	99	0.077	0.022	1.246	0.989
ACOS	60x20	CO2	117	177	0.156	-0.042	1.089	1.083