

Regions	Model resolution	P-L( $\text{NO}_x$ ) [Tg yr <sup>-1</sup> ]	P-L( $\text{NO}_x$ ) $\text{HNO}_3$ [Tg yr <sup>-1</sup> ]	$\text{NO}_2$ burden [Gg]	$\tau_{\text{NO}_2+\text{OH}\rightarrow\text{HNO}_3}$ [h]	PBL height [m]
E-China (JJA)	2.8° × 2.8°	-3.01	-3.03	1.49	4.34	847
	1.1° × 1.1°	-3.71	-3.75	1.98	4.65	898
	0.56° × 0.56°	-3.70	-3.72	1.99	4.69	730
	ERA-Interim					556
W-USA (JJA)	2.8° × 2.8°	-0.873	-0.793	0.91	10.0	1316
	1.1° × 1.1°	-0.859	-0.820	1.00	10.7	1218
	0.56° × 0.56°	-0.891	-0.849	0.97	9.99	1198
	ERA-Interim					1127
S-America (DJF)	2.8° × 2.8°	-0.159	-0.0312	0.30	83.4	677
	1.1° × 1.1°	-0.204	-0.0283	0.37	116	697
	0.56° × 0.56°	-0.189	-0.0320	0.36	98.8	659
	ERA-Interim					489