SUPPLEMENT FOR THE RESPONSE TO REVIEWER #2

Number of tables:1 Number of figures: 3

Table list

Table S4 in the revised supplement (Table S3 in the original submission): Comparison of the annual F_d of N and S in this and other studies (kg N/S ha^{-1} yr^{-1}).

Figure list

Figure 5 in the revised manuscript: The interannual variability of N and S deposition, emissions and component proportion in China from 2005 to 2020. The emission data over China were taken from MEIC.

Figure 7 in the revised manuscript: The spatial distributions of N and S deposition flux in 2005-2020.

Figure 9 in the revised manuscript: Annual mean D/E ratio of OXN, RDN and sulfur from 2005 to 2020 in different regions (a) and linear relationship between regional deposition and emissions (b-d).

Table S4 in the revised supplement (Table S3 in the original submission): Comparison of the annual F_d of N and S in this and other studies (kg N/S ha^{-1} yr^{-1}).

Reference	Study region	Research scale	Study period	Dry deposition							Wet/bulk deposition			Total deposition	
				NO_2	HNO_3	NO_3^-	NH_3	NH_4^+	SO_2	SO_4^{2-}	NH_4^+	NO_3^-	SO_4^{2-}	N	S
This study	China	Grid level	2005-2020	3.4	5.3	1.7	10.3	4.2	15.5	1.2	3.3	4.6	6.4	32.9	23.1
Nowlan et al. (2014)	China	Grid level	2005-2007	0.2											
Lye and Tian (2007)	China	Grid level	2003	2.9							7.1	2.8		12.9	
Jia et al. (2014)	China	Grid level	1980-2010												
Jia et al. (2016)	China	Grid level	2005-2014	0.6	1.1	0.1	5.4	0.3			13.9				
Tan et al. (2022)	China	Grid level	2010								4.2	3.4			
Itahashi et al. (2018)	China	Grid level	2010								3.5	2.5			
Zhao et al. (2017)	China	Grid level	2008-2012	0.3	1.7	1.0	0.5	2.6			6.6	3.4		18.1	
Xu et al. (2015)	China	43 sites	2010-2014	0.2-9.8	0.2-16.6	0.1-4.5	0.5-16.0	0.1-11.7			1.0-19.1	0.5-20.1		39.9	
Xu et al. (2019)	China	32 sites	2010-2015	3.1	5.2	1.4	9.6	3.7			11.4	10.3			
Wen et al. (2020)	China	66 sites	2011-2018			22.5					19.4				
Pan et al. (2012)	North China	10 sites	2007-2010	0.8-4.5		2.2-3.1	8.1-64.2	1.7-5.5			10.3-22.0	3.4-10.2		60.6	
Pan et al. (2013)	North China	10 sites	2007-2010						32.4	12.8			19.6		64.8
Zhu et al. (2015)	China	Grid level	2013								7.3	5.9			
Yu et al. (2016)	China	43 sites	2009-2014									32.9	116.0		
Yu et al. (2019)	China	Grid level	1985-2015	0.8	2.0	2.7	0.5	4.3			5.9	4.2		20.4	
Li et al. (2019)	China	Grid level	2010										71.5		
Li et al. (2020)	China	Grid level	2011-2016								5.9	13.3	33.4		
Liu et al. (2016a)	Southwest China	1 site	2003-2013								17.5	8.2	21.7		
Liu et al. (2016b)	China	225 data records	2003-2014								6.8	5.4			
Liu et al. (2016c)	China	174 sites	2000-2013										23.0		
Liu et al. (2017a)	China	Grid level	2010-2012									5.8			

Table S4 (continued)

Reference	Study region	Research scale	Study period	Dry deposition							Wet/bulk deposition			Total deposition	
				NO_2	HNO_3	NO_3^-	NH_3	NH_4^+	SO_2	SO_4^{2-}	NH_4^+	NO_3^-	SO_4^{2-}	N	S
Liu et al. (2017b)	China	Grid level	2012			1.5									
Liu et al. (2021)	China	Grid level	2008-2016								6.5				
Luo et al. (2016)	China	16 sites	2010-2012						2.3-26.5	0.5-3.4					
Ge et al. (2014)	China	Grid level	2007								9.1	9.1	48.8	35.0	83.3
Kuribayashi et al. (2012)	China	6 sites	2001-2005						23.5	3.8				49.4	
Zhang et al. (2017)	China	Grid level	2007-2014	0.005-8.54											
Zhou et al. (2021)	China	Grid level	2013-2018	2.1-3.1					7.5-18.4						
Qiao et al. (2015a)	Sichuan, China	1 site	2010-2011								1.4	1.3	8.1		
Qiao et al. (2015b)	Sichuan, China	Grid level	2010-2011									0.3	2.8		
Zhang et al. (2022)	Tibetan Plateau	27 sites													
Larssen et al. (2011)	South China	4 sites	2001-2004								0.4-0.9	0.2-0.5	0.9-1.9	0.4-2.5	1.5-10.5
Jiang et al. (2020)	Hunan, China	5 sites	2015-2016						8.6				18.2		26.8

Figure 5 in the revised manuscript: The interannual variability of N and S deposition, emissions and component proportion in China from 2005 to 2020. The emission data over China were taken from MEIC.

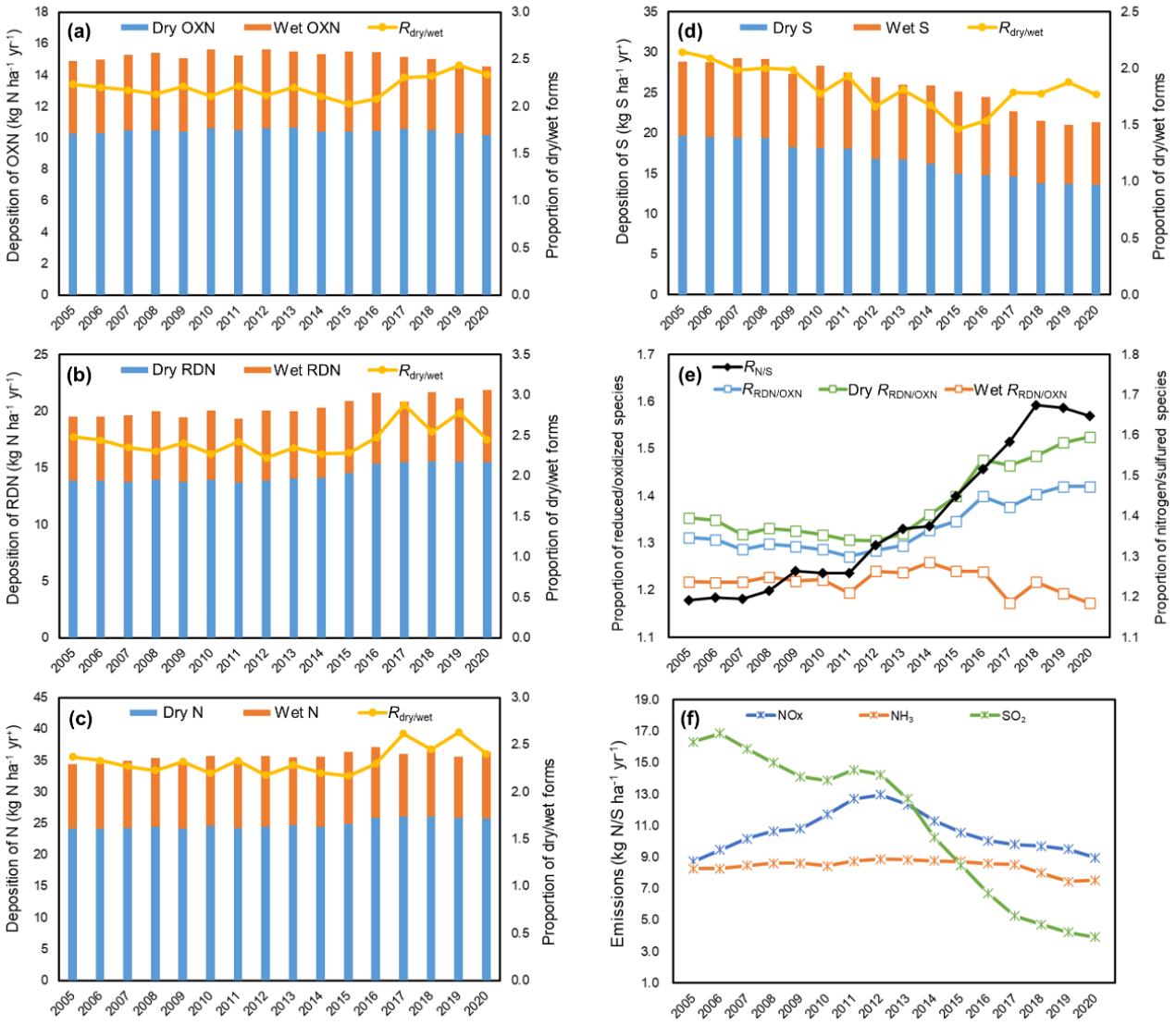


Figure 7 in the revised manuscript: The spatial distributions of N and S deposition flux in 2005-2020.

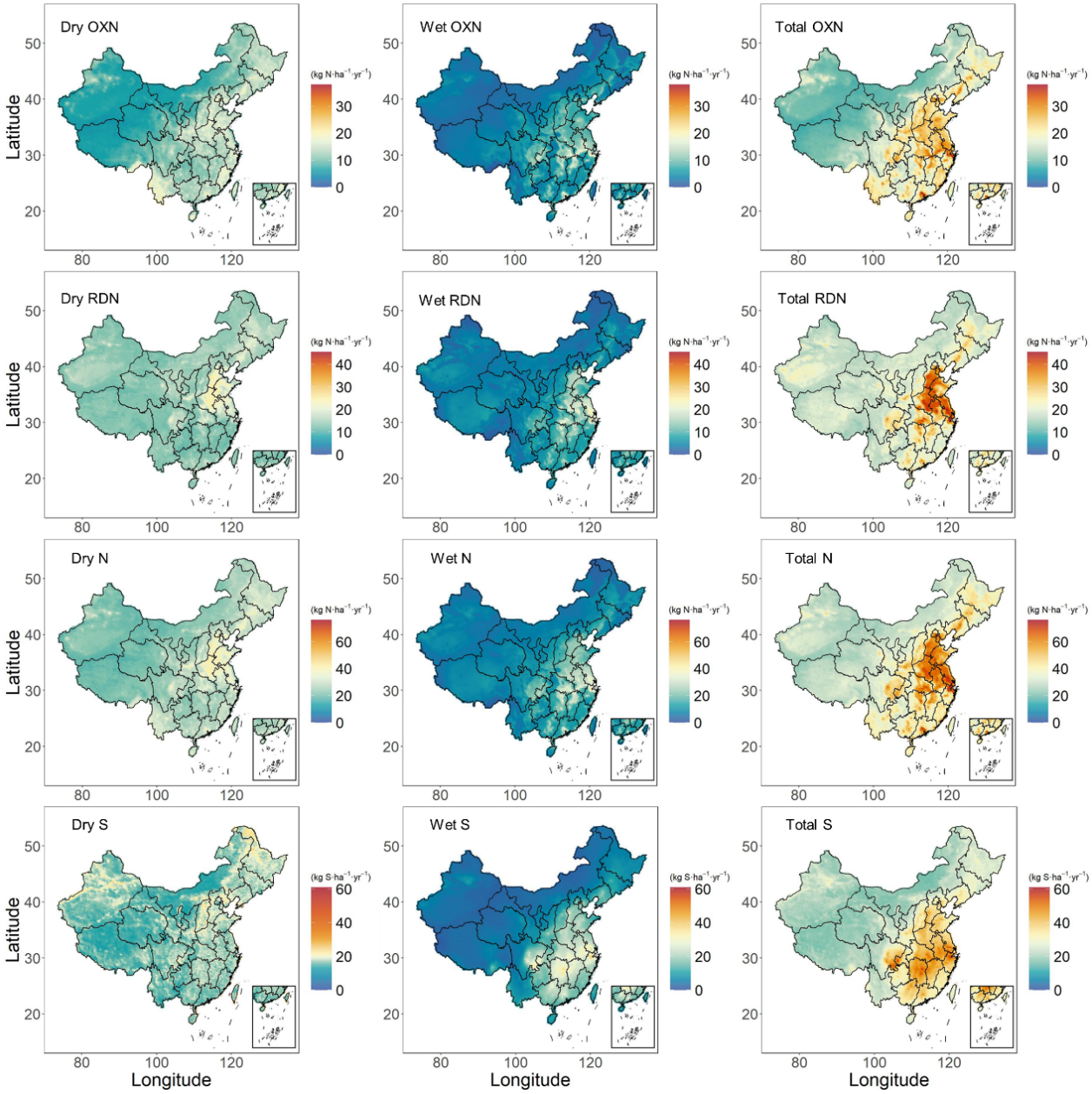
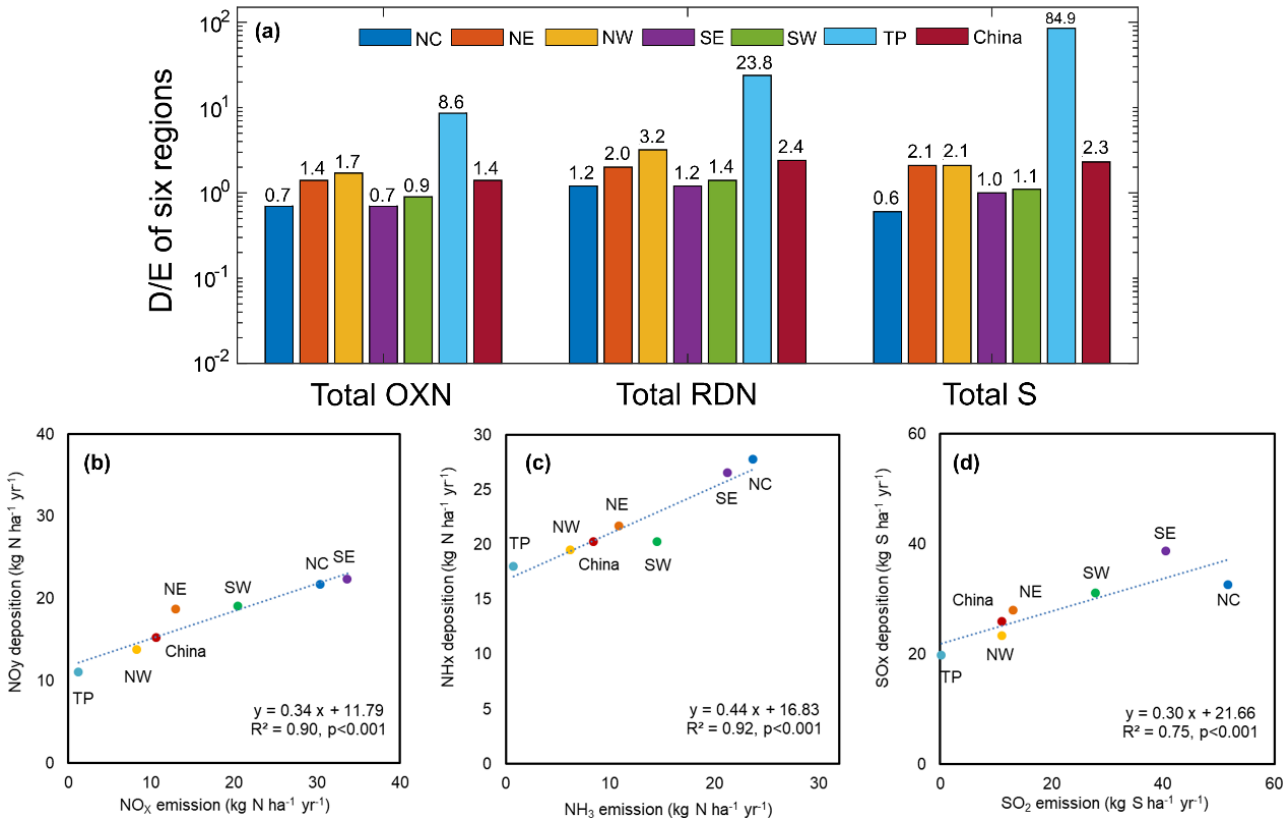


Figure 9 in the revised manuscript: Annual mean D/E ratio of OXN, RDN and sulfur from 2005 to 2020 in different regions (a) and linear relationship between regional deposition and emissions (b-d).



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