Table S1 $\delta^{15}N$-biomass

Sample	Fuel Compo.	Sample Weight (mg)	%N	$\delta^{15}N$ (‰)	Compo. Mass Weighted $\delta^{15}N$ ‰	Fraction in Mixture	Mixture Mass Weighted $\delta^{15}N$ (‰)
PIPO	Duff	4.87	1.11	0.32	0.39	0.16	0.1
PIPO	Duff	5.00	1.11	0.31			
PIPO	Duff	5.36	1.20	0.51			
PIPO	Litter	4.75	0.57	1.27	0.94	0.29	
PIPO	Litter	7.60	0.54	0.59			
PIPO	Canopy	4.76	0.97	-0.11	-0.10	0.31	
PIPO	Canopy	5.16	0.97	-0.10			
PIPO	Rotten	7.06	0.19	1.15	-1.33	0.18	
PIPO	Rotten	10.14	0.17	-2.29			
PIPO	Rotten	10.30	0.16	-1.55			
PIPO	Rotten	10.37	0.18	-2.82			
PICO	Duff	4.69	0.51	-2.95	-2.53	0.20	-3.5
PICO	Duff	16.31	0.42	-1.83			
PICO	Duff	10.58	0.68	-2.63			
PICO	Litter	4.45	0.84	-2.73	-3.09	0.11	
PICO	Litter	4.75	0.91	-3.38			
PICO	Litter	7.06	0.85	-3.15			
PICO	Canopy	4.45	0.93	-4.17	-4.16	0.40	
PICO	Canopy	5.24	0.88	-4.14			
PICO	Shrub	4.48	0.90	-3.51	-3.36	0.09	
PICO	Shrub	6.60	0.88	-3.21			
PSME	Duff	4.90	0.74	-0.08	0.39	0.15	-0.8
PSME	Duff	9.95	0.87	0.79			
PSME	Litter	4.53	0.72	-2.41	-2.30	0.11	
PSME	Litter	6.69	0.72	-2.19			
PSME	Canopy	4.66	0.87	-2.59	-2.33	0.46	
PSME	Canopy	5.99	0.86	-2.08			
PSME	Rotten	7.76	0.31	2.02	1.67	0.28	
PSME	Rotten	7.08	0.31	1.74			
PSME	Rotten	10.09	0.30	1.23			
Chamise	Canopy	5.27	1.14	-3.03	-2.84		
Chamise	Canopy	5.42	1.14	-2.66			
PIEN	Duff	4.68	1.32	-1.38	-1.41	0.17	-2.8
PIEN	Duff	5.03	1.40	-1.43			
PIEN	Canopy	4.59	0.95	-3.95	-3.50	0.31	
PIEN	Canopy	6.19	0.95	-2.70			

PIEN	Canopy	5.48	0.98	-3.84	
ABLA	Duff	5.25	1.17	-1.57	-1.40
ABLA	Duff	6.47	1.20	-1.25	
ABLA	Litter	4.38	1.00	-4.02	-3.85
ABLA	Litter	6.24	0.91	-3.66	

Table S2 Comparisons between $[HONO]_{ADS}$ with mean values of various high resolution methods including MC/IC, FTIR, CES and PTR-ToF.

Fire no.	ADS(ppb)	MCIC(ppb)	CES(ppb)	FTIR(ppb)	PTR-ToF (ppb)
8	25.7	25.7	22.4	29.5	29.5
9	21.3	24.9	19.7	--	--
10	42.2	44.2	46.6	--	--
11	112.3	69.8	103.3	--	--
14	25.3	24.5	35.6	25.7	41.3
15	51.0	76.2	58.9	37.9	50.2
16	70.0	56.4	70.1	56.4	--
17	47.1	53.3	39.4	35.1	--
18	45.3	38.3	50.0	41.3	50.0
19	23.8	41.5	28.4	24.3	30.9
20	52.5	42.9	56.8	41.9	--
21	9.9	6.0	--	7.0	16.2
22	40.0	32.0	--	14.5	42.1

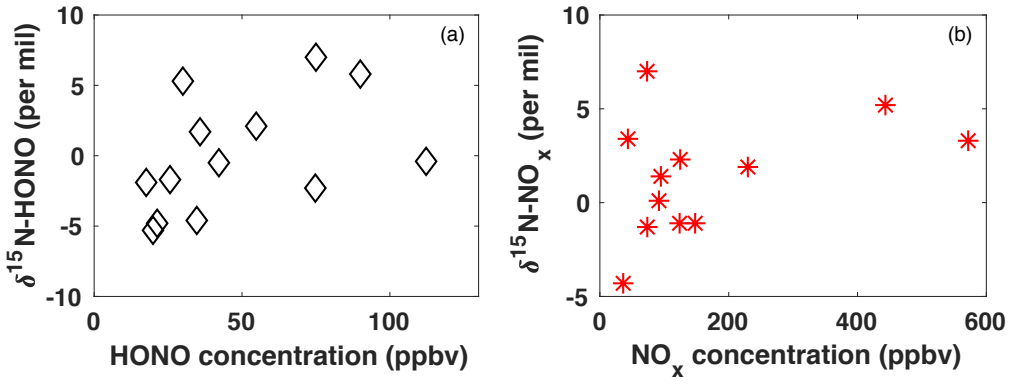

Figure S1. Relationship between $\delta^{15}N$ value versus concentration for HONO (a) and NO_x (b). p-values are 0.12 (a) and 0.93 (b) respectively.

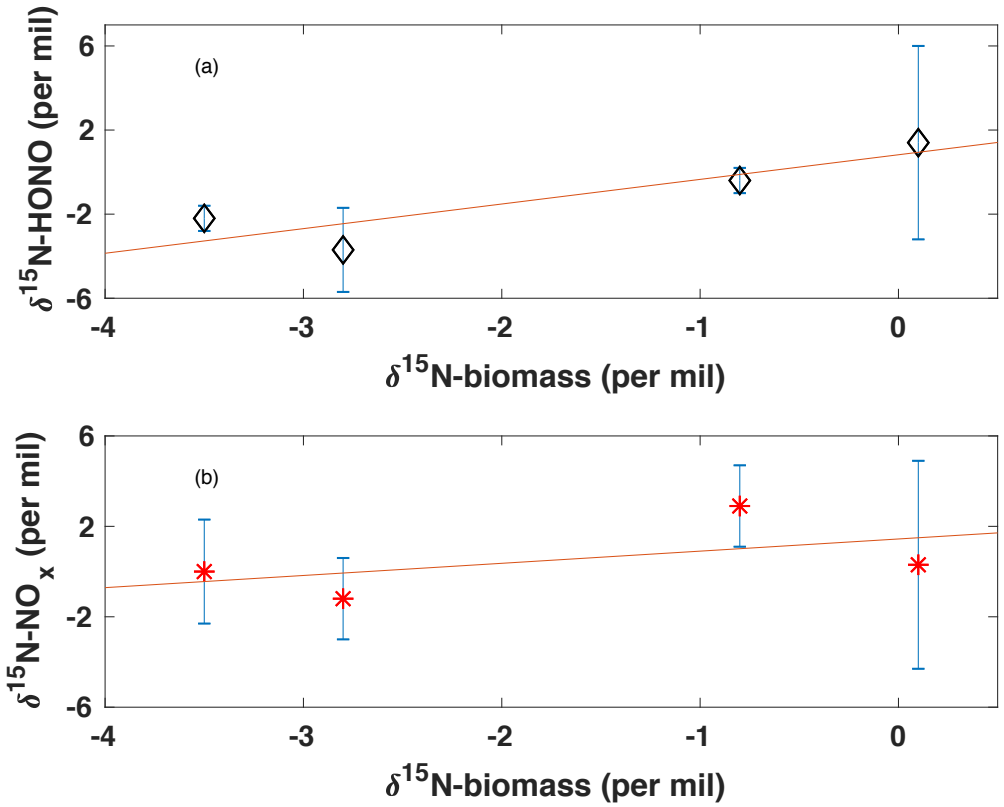

Figure S2. Linear regressions between $\delta^{15}N$-HONO (and $\delta^{15}N$-NO_x) and $\delta^{15}N$-biomass.
$\delta^{15}N$-HONO = 1.2 $\delta^{15}N$-biomass + 0.80 (r^2=0.83, p=0.1) **(a)**;
$\delta^{15}N$-NO_x = 0.54$\delta^{15}N$-biomass + 1.4 (r^2=0.28, p=0.5) **(b)**.
The error bars are propagation of replicate uncertainty (1σ) and method uncertainty.