

Proposed Modeling Data Stream for ATom-1

Species	Name	Primary Stream (X)	AltGroup	Stream (Y)	Stream (Z)
O3	O3_X	MER10+interpolates			
NOx	NOX_X	MER10+interp+PSS-NO2*	A	NOX_Y	
CO	CO_X	MER10+interpolates	B	CO_Y	
HNO3	HNO3_X	MER10+interpolates	C	HNO3_Y	HNO3_Z
CH3OOH (MHP)	CH3OOH_X	MER10+interpolates	C	CH3OOH_Y	CH3OOH_Z
H2O2	H2O2_X	MER10+interpolates	C	H2O2_Y	H2O2_Z
HNO4 (PNA)	HNO4_X	MER10+interpolates	D	HNO4_Y	HNO4_Z
HCHO	HCHO_X	MER10+interpolates			
CH4	CH4_X	MER10+interpolates			
PAN	PAN_X	MER10+interpolates	E	PAN_Y	
MeONO2	MeONO2_X	MER10+interpolates	F	MeONO2_Y	
EtONO2	EtONO2_X	MER10+interpolates	F	EtONO2_Y	
C5H8	C5H8_X	MER10+interpolates	G	C5H8_Y	
Acetone	Acetone_X	MER10+interpolates	H	Acetone_Y	
Acetaldehyde	Acetaldehyde_X	MER10+interpolates	H	Acetaldehyde_Y	
SAD	SAD_X	MER10+interpolates			
Ethane	C2H6_X	MER10+interpolates	G	C2H6_Y	
Propane	C3H8_X	MER10+interpolates	G	C3H8_Y	
i-Butane	iC4H10_X	MER10+interpolates	G	iC4H10_Y	
n-Butane	nC4H10_X	MER10+interpolates	G	nC4H10_Y	
C2H4	C2H4_X	MER10+interpolates	G	C2H4_Y	
C2H2	C2H2_X	MER10+interpolates	G	C2H2_Y	
Benzene	Benzene_X	MER10+interpolates	G	Benzene_Y	
Toluene	Toluene_X	MER10+interpolates	G	Toluene_Y	
Xylene	Xylene_X	MER10+interpolates	G	Xylene_Y	

Instrument	Species Included in the MDS Variables
NOyO3	
NOyO3 + CAFS+ATHOS	
QCLS /alt=Picarro	
CIT-CIMS	
CIT-CIMS	
CIT-CIMS	
CIT-CIMS	
ISAF	
Picarro	
PANTHER ECD	CH3C(O)ONO3
WAS	
TOGA+WAS	EtONO2, i-/n-PrONO2, 2-BuONO2, 3-methyl-2-BuONO2, 2-/3-PenONO2
TOGA+WAS	Isoprene and a-/b-Pinenes
TOGA	
TOGA	
LAS	Total aerosol surface area density (over all measured size ranges)
WAS	
TOGA+WAS	
TOGA+WAS	i-Butane and i-Pentane
TOGA+WAS	n-Butane, -Pentane, -hexane, -heptane
TOGA+WAS	Ethene, propene, and butene
TOGA+WAS	
TOGA+WAS	
TOGA+WAS	Toluene and Ethylbenzene
TOGA+WAS	m/o/p-Xylenes

Construction of MDS Variables

measured. Alt. stream uses NO₂-measured as upper limit for sensitivity test

Primary stream uses QCLS and interpolates; Alt. stream uses Picarro CO

include data from CIMS backup instrument rather than interpolates (Michelle Kim will provide).

will include data from CIMS backup instrument

include data from CIMS backup instrument

include data from CIMS backup instrument

Primary stream will use MER10-PAN. Alt. stream will use (PAN+2sigma)

(4*MeONO₂-LLOD) as minimum value

as minimum; Alt. stream takes (4*LLOD) as minimum.

minimum; Alt. stream takes (4*LLOD) as minimum.

Primary stream will use MER10-Acetone & interpolates. Alt. stream will use (Acetone+2sigma)

Primary stream will use MER10-Acetaldehyde & interpolates. Alt. stream will use (Aldehyde+2sigma)

LLOD) as minimum value

LLOD) as minimum.

Alt. stream takes (4*LLOD) as minimum.

Alt. stream takes (4*LLOD) as minimum.

minimum; Alt. stream takes (4*LLOD) as minimum.

LLOD) as minimum.

(4*Benzene-LLOD) as minimum.

(4*Toluene-LLOD) as minimum.

(4*LLOD) as minimum.