TAG-AMS
News and Updates

Thermal desorption Aerosol GC (TAG) - Aerodyne Aerosol Mass Spectrometer (AMS)

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Compound Specific Time Trends @ CalNex

- Deuterated standard
- Calibration standard
- PMF NDHOA
- PMF DIHOA
- Dibenzofuran
- Phytane
Preliminary results from BEACHON 2011

Longifolene*  β-caryophyllene*  Alloaromadendrene*

Signal x 10^6

m/z 161
m/z 189
m/z 204

Standard*

10 ng

Ambient

Ambient

Ambient
Sesquiterpenes Diurnal Profiles

- Alloaromadendrene
  - Concentrations increase starting early evening
  - More detailed analysis to come

- Longifolene

Sufficient time resolution for diurnal profiles
- Concentrations increase starting early evening
- More detailed analysis to come

AGU Fall Meeting 2012: Arthur Chan et al.: *Chemical Composition of Organic Aerosol in a Pine Forest: Bulk and Speciated Measurements by In-situ TAG-AMS and Offline GCxGC/HRTOFMS at BEACHON-RoMBAS 2011*
TAG-AMS @ CalNex2010
Interface, Column and CTD cell
Interface, Column and CTD cell
Control Units – No Computer anymore
Control Units – No Computer anymore
TAG-AMS @ BEACHON-RoMBAS
The Auto-Injector

24'' ≈ 61 cm

18'' ≈ 46 cm

19'' ≈ 48 cm
Two successful field deployments (CalNex 2010 & BEACHON 2011)
→ 3 papers in the queue
“Revamped” TAG control system: fully independent microprocessor control operation → Windows software only necessary for troubleshooting and setting up TAG runs
Rebuilding it in a very compact design
Optional standalone TAG Tower
Final design ready: approx. beginning of 2013 (Feb-Mar)

Keep working on:
Analysis software based on IGOR
Intensive testing on the final TAG module

Future improvements in testing:
“D-TAG”: Derivatization system/capabilities → access to much more oxygenated species
Two successful field deployments (CalNex 2010 & BEACHON 2011)→ interesting data (e.g. PMF – tracer correlation)→ 3 papers in the queue

"Revamped" TAG control system: fully independent microprocessor control→ Windows software only necessary for troubleshooting and setting up TAG runs

Rebuilding it in a very compact design

Optional standalone TAG Tower

Final design is on the finishing line: approx. Beginning of 2013 (Feb-Mar)

Keep working on:

- Analysis software
- Data analysis of campaign data
- Intensive testing on the final TAG module

Future improvements in discussion:

- D-TAG: Derivatization system/capabilities → access to much more oxygenated species

Thanks!

AMS Users Meeting 2012 Minneapolis, Oct. 13th 2012