

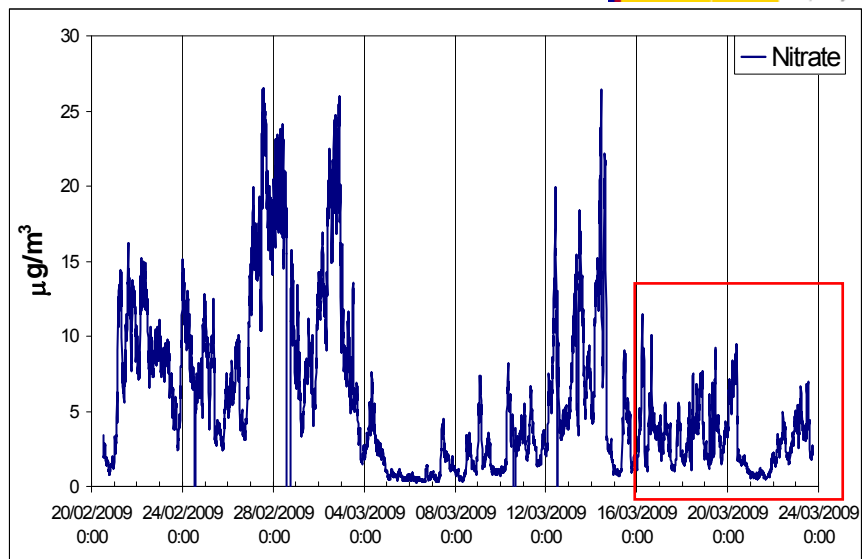


**CIEMAT**  
**Madrid, SPAIN**  
**Atmospheric Pollution Unit**

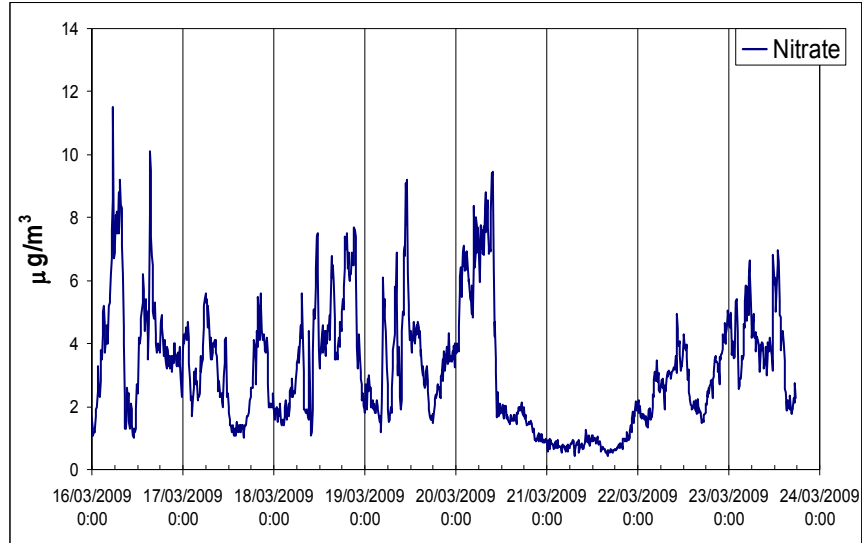
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**Fourth Science Meeting**  
**CSIC-IJA, Barcelona**

DAURE 2009 Experimental Field Campaign, Barcelona 4<sup>th</sup> Meeting 24 March 2009



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## Cascade impactor: MOUDI

Ten stages: 0.056, 0.10, 0.18, 0.32, 0.56, 1.0, 1.8, 3.2, 5.6, 10, 18  $\mu\text{m}$   
and a backup filter stage ( $< 0.056 \mu\text{m}$ )

Mass size distribution of soluble ions :  $\text{NO}_2^-$ ,  $\text{NO}_3^-$ ,  $\text{SO}_4^{2-}$ ,  $\text{Cl}^-$ ,  $\text{Ca}^{2+}$ ,  
 $\text{Na}^+$ ,  $\text{K}^+$ ,  $\text{Mg}^{2+}$ ,  $\text{NH}_4^+$



BCN

–12 hour sampling schedule (10-22, 22-10 local time)  
–Starting the 24<sup>th</sup> Feb night and completed 12<sup>th</sup> Mar  
–32 samples (16 days)



Montseny

– 4 samples (24/48 hour sampling),  
13<sup>th</sup>-19<sup>th</sup> Mar

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## Individual Particle Analysis (SEM/EDS) In collaboration with RJ Lee Group, Inc.

Sierra-Andersen impactor  
used as a PM2.5 cut-off



BCN2 - 3 sampling days  
Four times/day:  
8-10 am, 12-2 pm, 4-6 pm, 8-10  
pm, (12 samples)

MSY2 – 1 sampling

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## Size number distribution at MSY site



The SMPS is already running!!!  
Starting 20<sup>th</sup> March

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# Possible papers



## **I. Inorganic composition**

### **Semi-continuous measurements**

- Daily evolution pattern under different meteorological and emission scenarios. Event analysis. Comparison with models
- Discrimination of primary and secondary origin by correlation with aerosol/gaseous species and meteorology. Formation processes

### **Size segregated samplings and chemical analysis**

- Mass distributions during nocturnal-emission and photochemical periods
- Chemical and neutralization balances for every impactor stage
- Comparison with Montseny

## **II. Microscopy analysis**

- Carbonaceous aerosol (C-bearing particles) and organic/sulfate mixtures (lost all the volatile compounds). Relationship with variations in aerosol acidity if possible.
- Heavy metal bearing particles.
- Primary Biogenic Organic Aerosols (PBOA): fungi spores, detritus and microorganisms

These papers should be prepared in cooperation with the other groups at BCN site