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Overview of the French contribution to the EMEP 2012-2013 summer and winter campaigns

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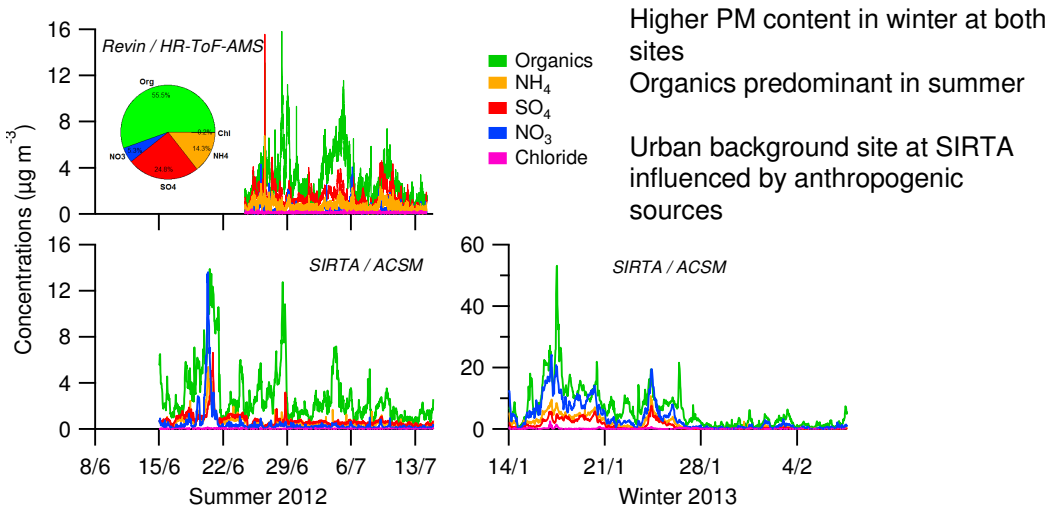


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1. Objectives

- provide a large quality-controlled database of PM levels and chemical composition for **5 sites** during two contrasted seasons
- measure simultaneously **PM compounds and their precursors** to better understand processes such as secondary organic aerosols (SOA) formation or condensation of semi-volatile species
- assess the importance of **vertical exchanges** in the variability of PM ground levels, especially in case of dust events;
- determine **PM sources** and their relative contributions

3. Non-refractory PM₁



2. Site locations and Instrumentation



Large variety of geographical locations and influences expected to affect PM measurements

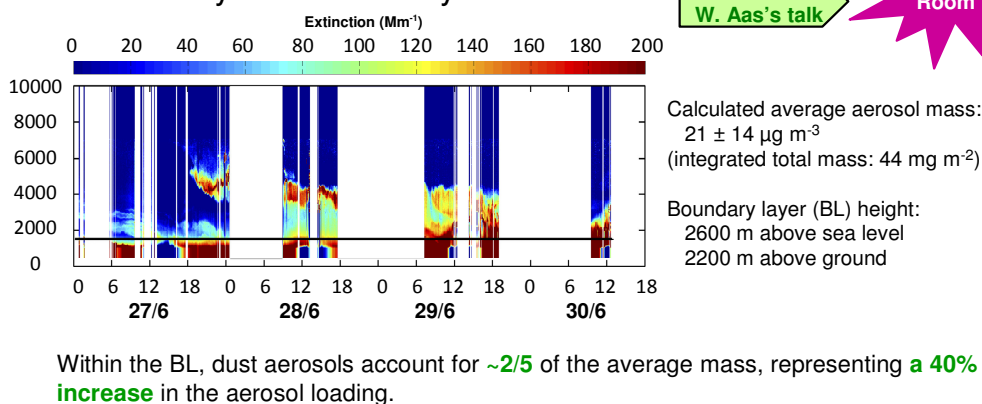
- Cap Corse: remote, coastal
- Puy-de-Dôme (PdD): remote, mid-altitude
- OPE: remote
- Sirta: urban background
- Revin: remote

	Sampling period	Cap Corse	OPE	Puy-de-Dôme	Revin	Sirta
PM ₁₀ mass	< 1 hr	S, W	S, W	S, W	S, W	S, W
PM _{2.5} mass	< 1 hr		S, W	S, W	S, W	S, W
PM ₁ mass		S, W	S, W	S, W	S, W	S, W
PM ₁₀ speciation	≥ daily	S, W	S, W	S, W	S, W	S, W
PM _{2.5} speciation	≥ daily	S, W	S, W			S, W
PM ₁ speciation (AMS, ACSM)	< 1 hr	S, W		W	S	S, W
Black Carbon	< 1 hr	S, W	W	S, W	S, W	S, W
Precursor (O)VOCs	≤ 6 hrs	S, W		S, W	S, W	S, W
NMHCs / (O)VOCs	< 1 hr	S			W	S, W
NO _x , CO and O ₃	< 1 hr	S, W	S, W	S, W	S, W	S, W
CO ₂	< 1 hr			S, W	S, W	S, W
SO ₂	< 1 hr			S, W	S	S, W
NH ₃	< 1 hr				S	S, W
Diff./scat. coef.	< 1 hr	S, W	W	S, W		S, W
Extinction, AOD	< 1 hr	S, W	W	S, W		S, W
Size distribution	< 1 hr	S, W	S, W	S, W		S, W

4. Vertical exchanges

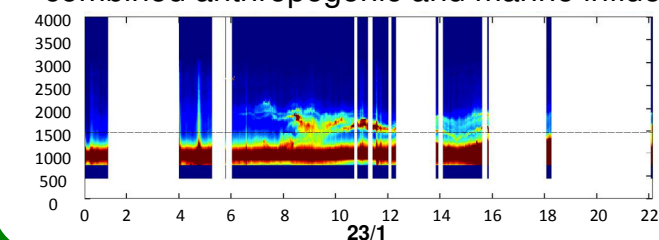
PdD summer data: **dust event** observed from June 27-30

⇒ confirmed by chemical analysis

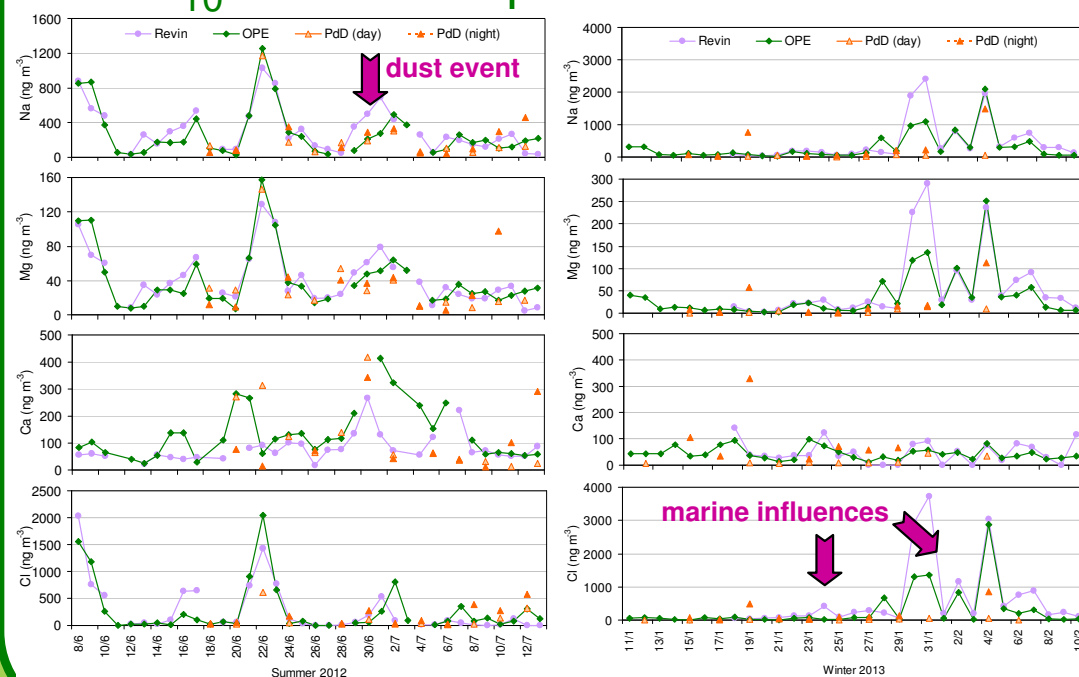


PdD winter data: **increased aerosol concentrations** on Jan 23

⇒ combined anthropogenic and marine influences



5. PM₁₀ chemical speciation



Main conclusions

- ⇒ Significant contribution to the EMEP European campaign (5/30 sites)
- ⇒ Aerosol concentrations mostly typical of remote sites with contrasted seasonal variations
- ⇒ Observations of specific events of regional/national impact

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