

# Supplement to 'Towards an online-coupled chemistry-climate model: evaluation of trace gases and aerosols in COSMO-ART'

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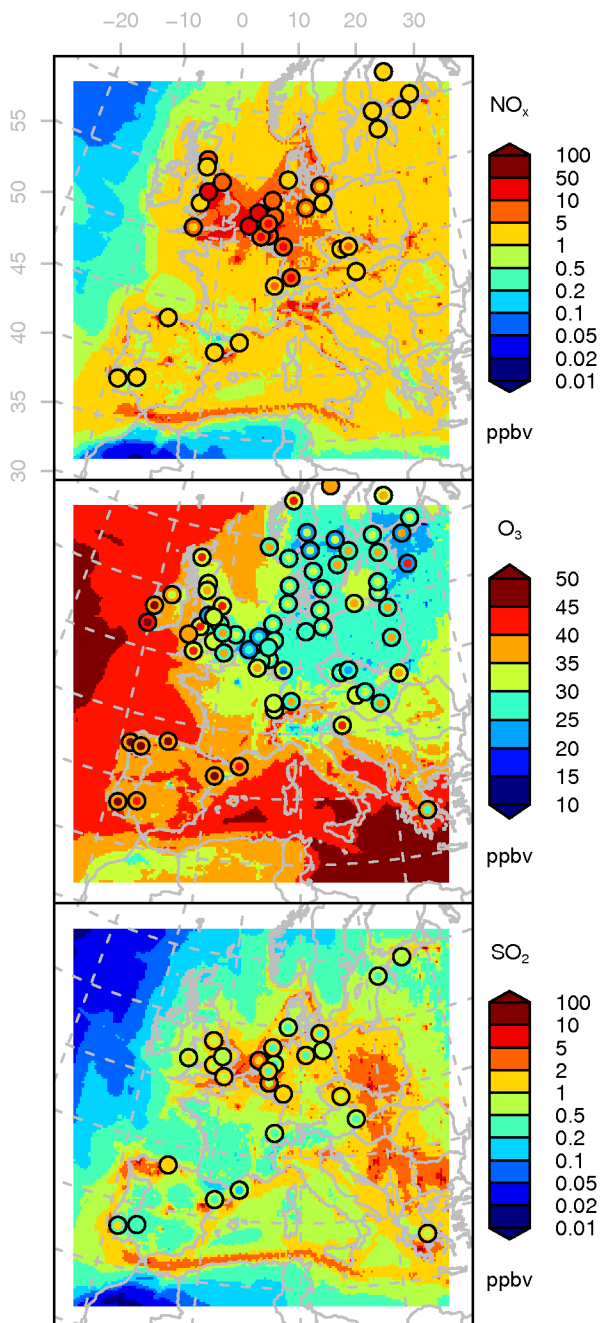


Figure 12: Overview of mean afternoon (hours 12 -18)  $\text{NO}_x$ ,  $\text{O}_3$  and  $\text{SO}_2$  concentrations like in Figure 4 but for the spring 2009 period.

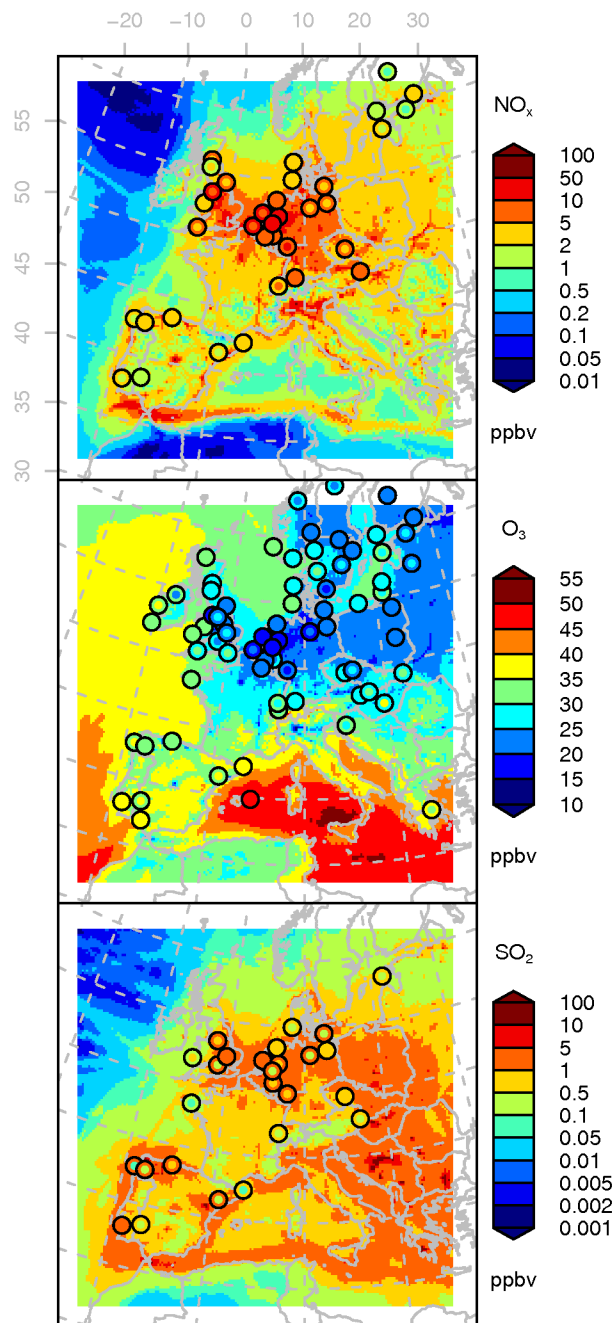


Figure 13: Overview of mean afternoon (hours 12 -18)  $\text{NO}_x$ ,  $\text{O}_3$  and  $\text{SO}_2$  concentrations like in Figure 4 but for the autumn 2008 period.

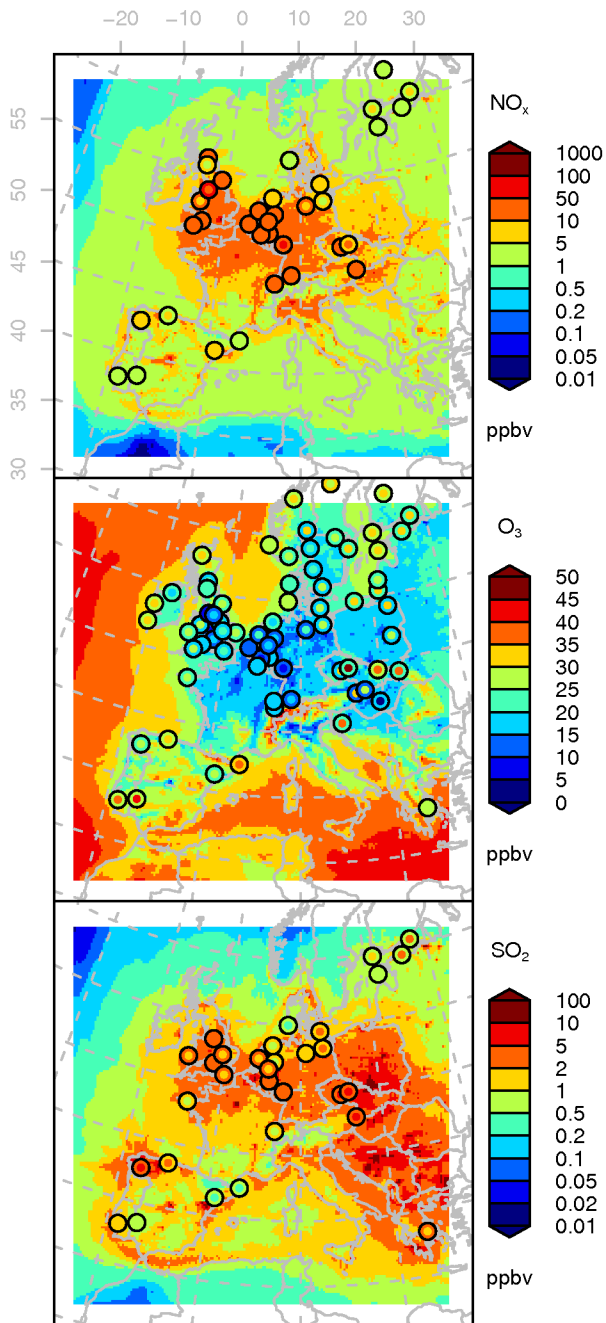


Figure 14: Overview of mean afternoon (hours 12 -18) NO<sub>x</sub>, O<sub>3</sub> and SO<sub>2</sub> concentrations like in Figure 4 but for the winter 2006 period.

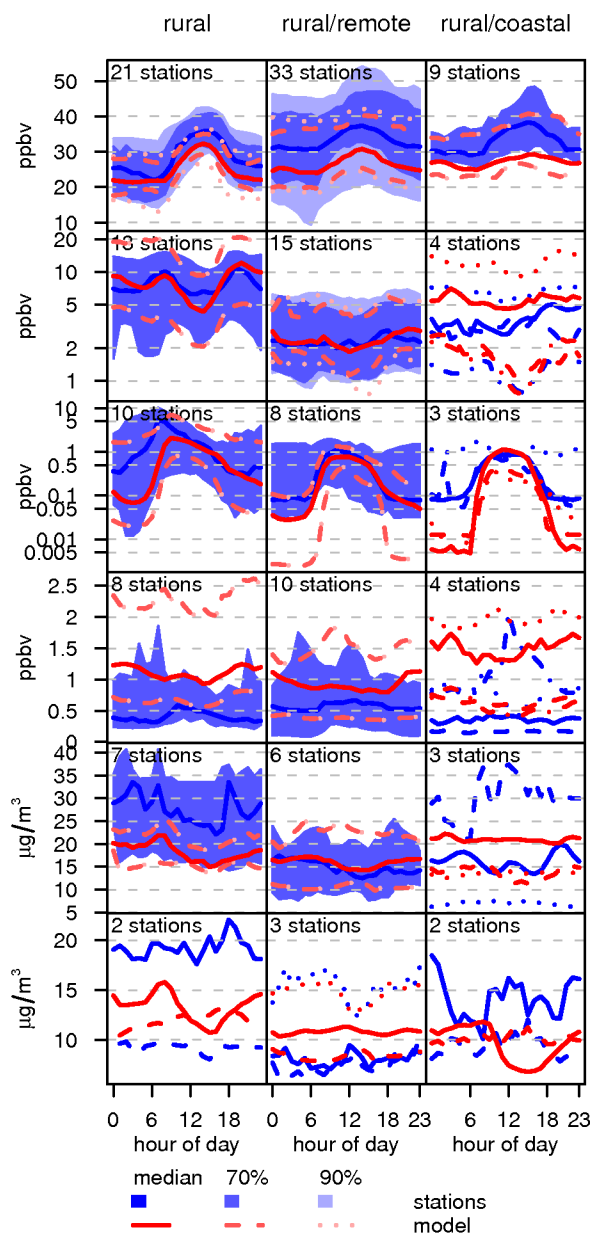


Figure 15: Statistics of mean diurnal cycles of several compounds for model and AIRBASE data. Like Figure 5 but for the spring 2009 period.

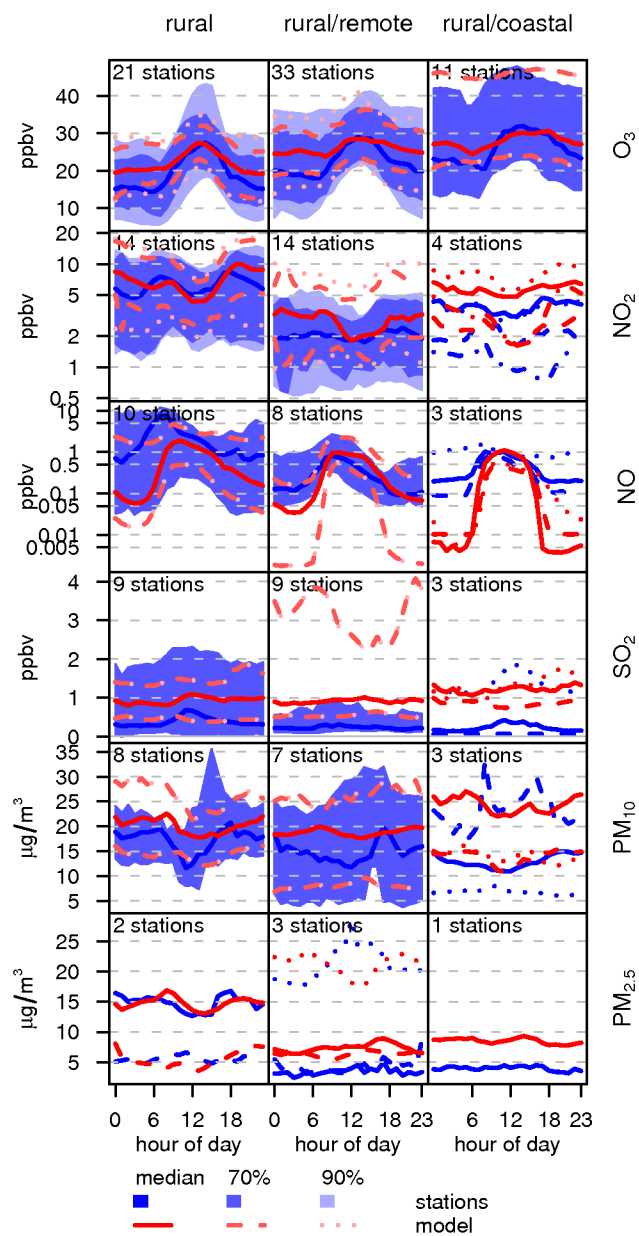


Figure 16: Statistics of mean diurnal cycles of several compounds for model and AIRBASE data. Like Figure 5 but for the autumn 2008 period.

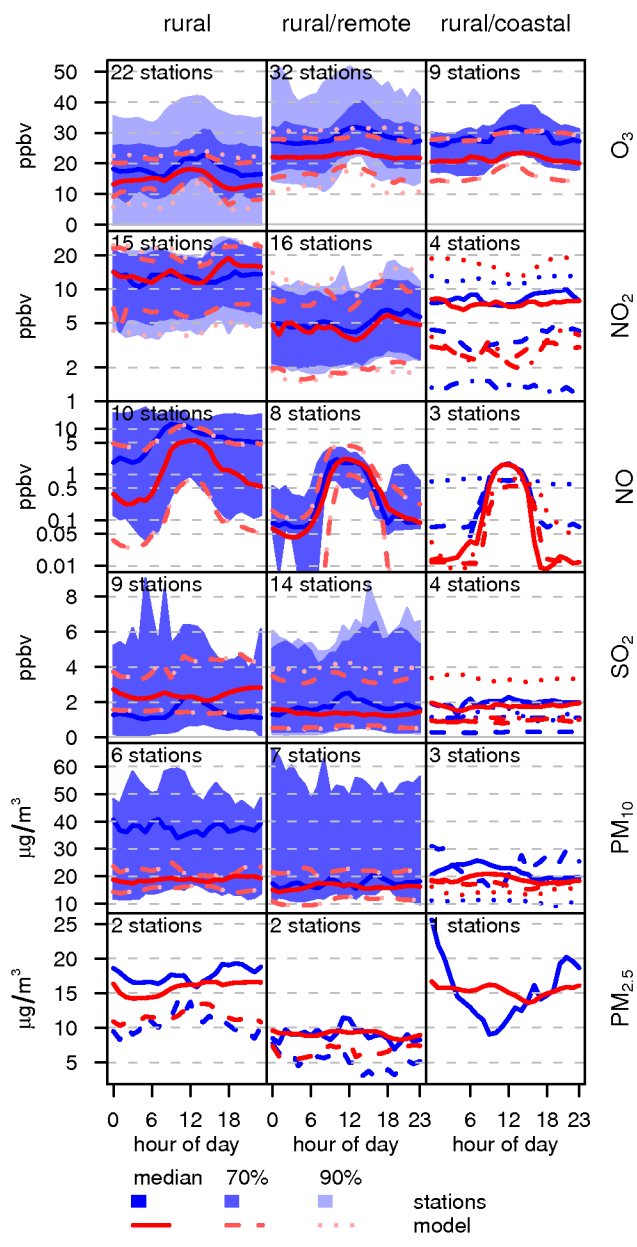


Figure 17: Statistics of mean diurnal cycles of several compounds for model and AIRBASE data. Like Figure 5 but for the winter 2006 period.

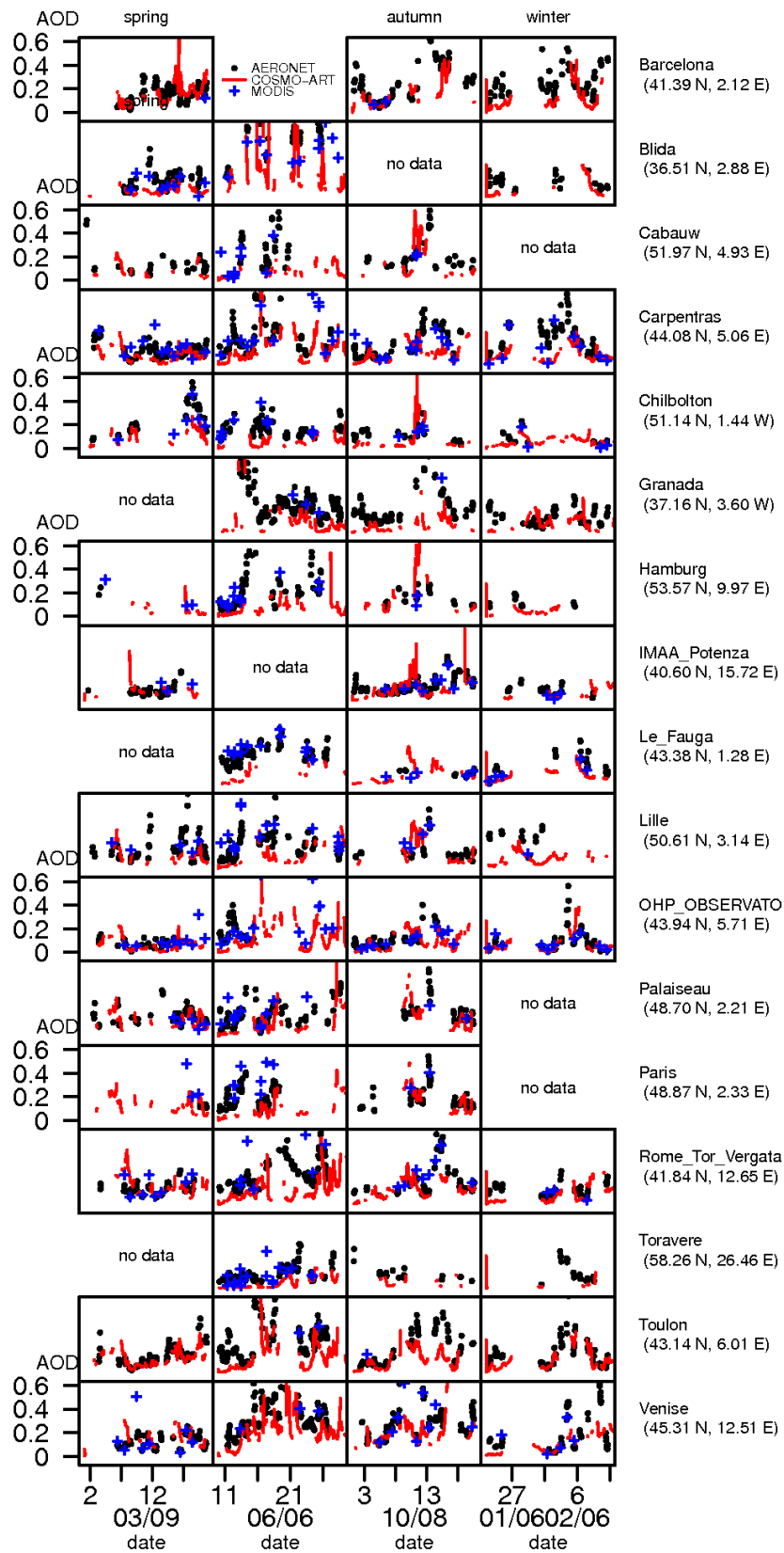


Figure 18: Timelines of aerosol optical depth (AOD) at several AERONET stations in Europe. Like Figure 8 but for the remaining stations.

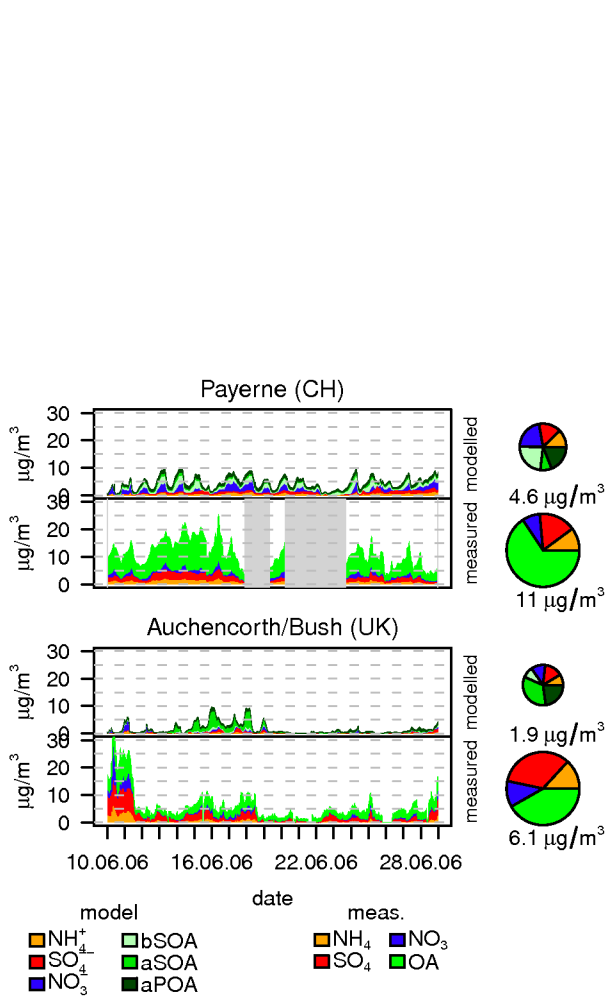


Figure 19: Timeline of aerosol chemical composition. Like Figures 9 and 10 a,b, but for the summer 2006 period.

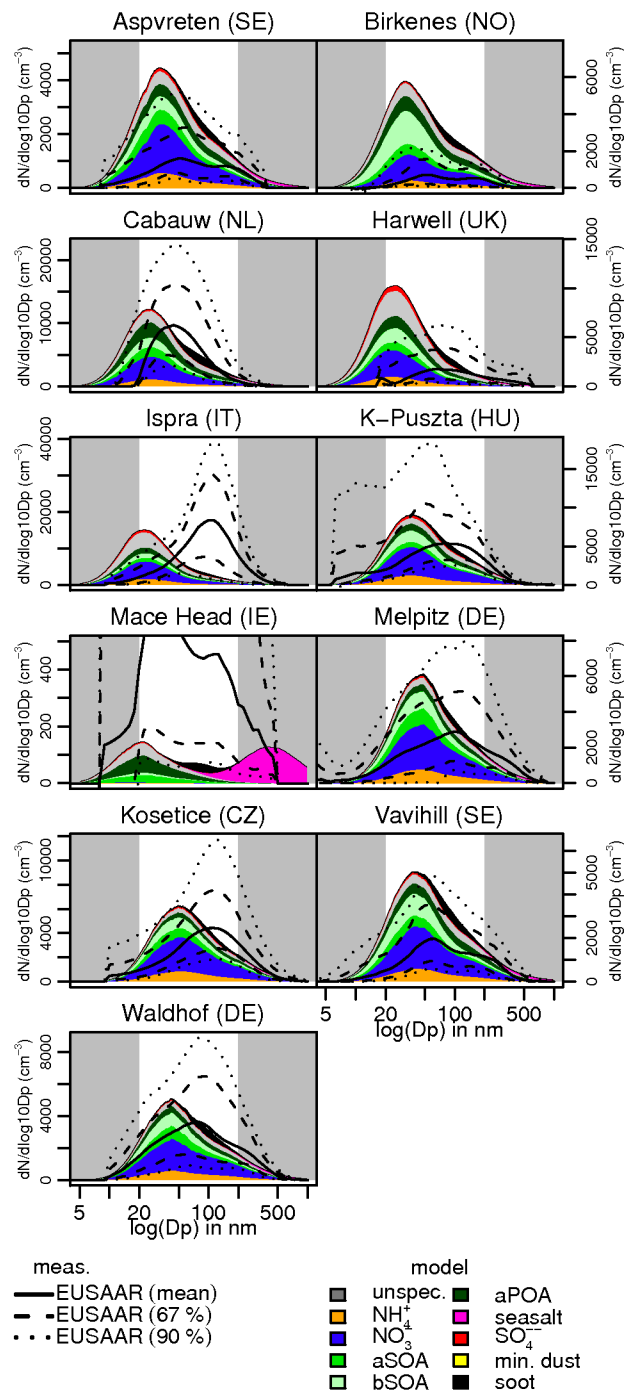


Figure 20: Comparison of modelled and measured aerosol size distributions at EUSAAR stations. Like Figure 11 but for the spring 2009 period.