



## **Evidence of change in UK atmospheric composition as a result of Icelandic volcanic emissions in 2014**

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Since 31st August 2014 an effusive eruption in a remote area known as Holuhraun north of Vatnajökull ice cap has been ongoing. The eruption does not produce ash but is known to emit high concentrations of gases and been found to be rich in  $\text{SO}_2$  but poor in halogens. Since the start of the eruption, a number of plumes have been observed at a background site in South East Scotland, where a number of trace species are monitored in both the gas and aerosol phase. On the 22<sup>nd</sup> September 2014, the site experienced the elevated total aerosol loadings of  $35 \mu\text{g m}^{-3}$  and  $31 \mu\text{g m}^{-3}$  for  $\text{PM}_{2.5}$  and  $\text{PM}_{10}$  respectively, compared to the annual averages of  $4.4 \mu\text{g m}^{-3}$  and  $7.9 \mu\text{g m}^{-3}$ . During this period elevated  $\text{SO}_2$ ,  $\text{SO}_4^-$  and HCl were clearly observed. One potential mechanism to explain the elevation HCl is that  $\text{Cl}^-$  aerosol was displaced from sea salt by  $\text{SO}_2$  emissions. This study will try to investigate this theory.