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Forecasting the weather
- ensemble techniques
in probabilistic weather prediction

Balloon measurements of electrification in the Eyjafjallajokull volcanic ash plume

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Lightning events were abundant during the different phases of the Eyjafjallajokull eruption in April and May 2010. Substantially downwind of the volcano over the UK, electrification within the plume was still detected, using our balloon-carried disposable instrument. The unusual characteristics of this eruption in generating widespread substantial quantities of fine ash were evident, from the data obtained by the specially-developed aerosol particle counter also carried by the balloon. The combination of weak electrification with fine ash particles in dry air 1200km from the volcanic source region suggests localised charging above remnant charge generated during the initial plume release. Such localised charging may result from the fair weather atmospheric electric field, or as a result of in-plume interactions.