



## **Coupling between the surface electric field and low level layer clouds**

R.Giles Harrison (1), Keri Nicoll (1), and Ewan O'Connor (2)

(1) University of Reading, Meteorology, Reading, United Kingdom (r.g.harrison@reading.ac.uk), (2) Finnish Meteorological Institute, Helsinki, Finland

The “fair weather” paradigm of atmospheric electricity assumes no local charge generation, and negligible associated local variability in the potential gradient measured at the surface. Strongly convective mixed phase clouds clearly violate this requirement, but the effects of weakly convective layer clouds have been little investigated. If such layer clouds are at low levels and therefore close to the surface, the charge associated with their lower boundary can be expected to affect the potential gradient. Surface potential gradient measurements associated with a sustained period of low level layer cloud above have been investigated for common variations between the cloud properties and electrical fluctuations. This analysis indicates that variability in the cloud and the surface potential gradient can be sufficiently closely coupled for the potential gradient to identify cloud base variations.