



## **The effect of coronal mass ejections on cloud microphysics**

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During close passages of coronal mass ejections, which cause Forbush decreases in the incoming galactic cosmic radiation, a measurable and significant change in the clouds microphysics appears to take place. Expanding a study by Svensmark, Bondo and Svensmark (GRL 36, 2009) the present work investigates the response of six cloud parameters, using MODIS data, to these Forbush Decreases.

We find that cloud emissivity, cloud fraction, liquid water content, and optical thickness show a reduction in signal above the 2-3 sigma level, and that the droplet effective radius drops in signal at just below the 2 sigma level 7-9 days after the minimum in atmospheric ionisation. It is not possible to resolve a significant response in the cloud condensation nuclei column density.

Furthermore there appears to be a systematic link between the reduction in amplitude of the cosmic ray ionisation and the size of the response of the studied parameters. These results adds further support to the suggestion that ions play a role in the formation of clouds.