

EMS7/ECAM8 Abstracts,
Vol. 4, EMS2007-A-00191, 2007
7th EMS Annual Meeting / 8th ECAM
© Author(s) 2007



Models of electrical effects on clouds, linking solar activity with weather and climate change

B. A. Tinsley

University of Texas at Dallas (Tinsley@UTDallas.edu)

Models of the global electric circuit and its downward current density J_z show responses to solar wind and cosmic ray flux changes that affect the deposition of electric charge at the boundaries of layer clouds. Models of the effect of such charge on the microphysics of the clouds suggest small but significant effects on precipitation rates and cloud lifetimes. These affect weather and climate through latent heat transfer and changes in the atmospheric radiation balance.