



The impact of the non-inductive manner of charging on the early stage electrical structure in thunderstorms

B. Tsenova (1)

R. Mitzeva (2)

(1) National Institute of Meteorology and Hydrology, Sofia, Bulgaria, (2) University of Sofia, Faculty of Physics, Department of Meteorology and Geophysics (tboriana@abv.bg, boryana.tsenova@meteo.bg)

Numerical simulations have been performed to test the impact of the parameterization for non-inductive electrification on the charge distribution in thunderclouds. Some empirical equations for the non-inductive charge transfer (i.e. new parameterization of Takahashi's (1978) data, equation for the charge sign reversal line, obtained during the new laboratory experiments in UMIST (2003)) were put in a numerical model to determine the electrical structure of three different thunderclouds. Results show that in some clouds the use of different parameterizations lead to a completely different structure of thunderclouds, which is in accordance with some previous studies (Mansell et al., 2005).