

Reconstruction of global electric circuit model and investigation of solar-climate connection

TAKAHASHI, Yukihiro^{1*}

¹Hokkaido University

Global electric circuit, GEC, model was proposed long time ago, around 1930s, in which thunderstorm plays a role of generator, and the ground and the ionosphere work as a spherical capacitor. However, the both qualitative and quantitative understanding of GEC is not sufficient only with oversimplified model. Recently the research on the solar-climate connection is becoming the significant issue in the climate study. The GEC is one of the important concept that potentially could take a role in modulating the Earth climate. We insist on the reconstruct of GEC from two points of views: 1) taking into account the nonuniformities both of ionospheric conductivity and of the distribution of the generators, and 2) establishing the observational methodology, excluding the effect of cloud existing just above the observation sites.

Keywords: global circuit, solar-climate connection