

A DETAILED DISCUSSION OF EFFECTS OF GEOMAGNETIC STORMS ON THE DYNAMICS AND ELECTRODYNAMICS OF THE EQUATORIAL UPPER ATMOSPHERE

E. BONELLI

Universidade Federal do Rio Grande do Norte, UFRN. CCET/DGEF. Natal, RN, Brazil, e-mail:

bonelli@geofisica.ufrn.br

There is a long chain of processes between the arrival of strong bursts of solar wind at the earth's magnetosphere and the onset of their effects in the ionosphere. We review most of these steps in a didactic and critical way using as many illustrations as possible. The discussion considers the quiet time equatorial dynamo, the prompt penetration electric field, the disturbed dynamo, and how each of these affects the onset of equatorial plasma bubbles. The quiet time and disturbed seed electric fields of the equatorial electrojet are also discussed.

disturbed dynamo, equatorial electrojet, prompt penetration electric field

E. Bonelli, Departamento de Geofísica, CCET/UFRN, 59072-970, Natal, RN, Brazil, email:

bonelli@ponta-negra.com