

Enhancements of foF2 Above Europe Before Strong Geomagnetic Storms

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Geomagnetic storm-induced ionospheric disturbances have been studied for several decades. Nevertheless, some features of these ionospheric disturbances are still not clear and hardly predictable. Substantial increases of foF2 a day or so belong to less known among them. They have sometimes been observed before the beginning of strong geomagnetic storms. Here we study such increases for foF2 of 65 strong geomagnetic storms of the current solar cycle, as they were observed above Europe. 15 out of 65 events were accompanied by significant (>10%) increases of foF2 before the storm onset. We discuss occurrence and possible origin of such enhancements of foF2. The effect may be related to soft particle precipitation in the region of the dayside cusp but also to a couple of other processes.