Ionospheric behaviour during storm recovery phase

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Intensive ionospheric research, numerous multi-instrumental observations and large-scale numerical simulations of ionospheric F region response to magnetic storm-induced disturbances during the last several decades were primarily focused on the storm main phase, in most cases covering only a few hours of the recovery phase following after storm culmination. Ionospheric behaviour during entire recovery phase still belongs to not sufficiently explored and hardly predictable features. In general, the recovery phase is characterized by an abatement of perturbations and a gradual return to the “ground state” of ionosphere. However, observations of stormy ionosphere show significant departures from the climatology also within this phase. This paper deals with the quantitative and qualitative analysis of the ionospheric behaviour during the entire recovery phase of strong-to-severe magnetic storms at middle latitudes for nowadays and future modelling and forecasting purposes.