Development of a local nowcast magnetospheric ring current index based on geomagnetic observatory data

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The Disturbance storm time (Dst) index is derived using the H-component perturbation on magnetometers from four observatories (Hermanus, Kakioka, Honolulu, and San Juan) near the Sq focus. The Dst index is a quantitative measure of geomagnetic activity (major disturbances are negative) that monitors the intensity of the magnetospheric ring current and it is derived and maintained by WDC Kyoto. The local nowcast index presented here is a geomagnetic index that is derived similarly to the Dst index for the each of the following low and mid-latitude observatories: Tristan da Cunha (South Atlantic, TDC), St. Helena (South Atlantic, SHE), Keetmanshoop (Namibia, KMH), Vassouras (Brazilian, VSS), Gan (Maldives, GAN) and Panagjurishte (Bulgaria, PAG). This local index is developed within the ESA’s SSA SWE G-ESC activity. Here, we assess the influence of the quiet-timeSq estimation on the local ring current index and the correlation of the index with other solar and geophysical parameters.