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Counter-electrojet occurrence as observed from C/NOFS satellite and ground-based magnetometer data over the African and American sectors

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An analysis of the counter-electrojet occurrence (CEJ) during 2008-2014 is presented for the African and American sectors based on local daytime (0700-1700 LT) observations from the Communications and Navigation Outage Forecasting System (C/NOFS) vertical ion plasma drift (equivalent to vertical E × B at altitude of about 400 km) and ground-based magnetometers. Using quiet time (Kp≤3) data, differences and/or similarities between the two datasets with reference to local time and seasonal dependence are established. For the first time, it is shown that C/NOFS satellite data is consistent with magnetometer observations in identifying CEJ occurrences during all seasons, although it depicts higher CEJ occurrence rate. With respect to local time, C/NOFS satellite also reveals more CEJ events than magnetometer observations despite both datasets showing the similar trend in CEJ identification

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No

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N/A

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