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Aurora boundaries during magnetic storm

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Using data on the equatorial boundary position of the polar oval obtained from DMSP satellites for 2010-2014 [1] and the values of solar wind parameters and geomagnetic indices during 29 magnetic storms, occurred during the selected period [2], we analyze the relationship between them. The resulting empirical dependence is compared with the previously obtained dependences on the Dst (SYM/H) and AL indices.

[1] L. M. Kilcommons, R. J. Redmon, and D. J. Knipp, J. Geophys. Res. 122 (2017) 9068.

[2] M.-T. Walach, and A. Grocott, J. Geophys. Res. 124 (2019) 5828.