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An effect of the 27 days solar rotation period on the electron density in the upper and topside ionosphere

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We have analyzed the correlation between the 27 days solar rotation as seen in F10.7 observations and in F peak electron density measurements. Using data (foF2) from ionosonde stations from years 1966-1991 in the northern and southern hemisphere (North hemisphere- Boulder, Millstone Hill, Juliusruh, Pruhonice, Irkutsk, Tokyo; South hemisphere - Argentine Island, Grahamstown, Cape Town, Canberra, Auckland, Tahiti) we have found that a delay between F107 measured at Ottawa and a particular ionosonde station increases almost linearly from the west to the east from appx. 0 to appx. 4 days. A north-south asymetry in the delay was found. We investigate this effect using numerical simulations
by the FLIP model.