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Oral
Four EUV solar radiation proxies (Mg II, Lyman alpha flux, F10.7 and Rz) are analyzed during the last four consecutive solar activity minima. Their variability within each minimum and between minima is compared considering monthly means. The comparison is also made through their role in filtering solar activity effect from ionospheric F2 region critical frequency, foF2, which is a parameter that at mid to low latitudes depends mainly on EUV solar radiation. The last two solar cycles, for example, would have shown unusual UV and EUV radiation behaviors regarding the connection between their “true” variation and solar proxies. Solar cycle 23 would have an EUV emission different from that deduced from traditional solar EUV proxies during its maximum and descending phase, and the same would happen during the minimum between cycles 23 and 24. These solar activity proxies are commonly used to filter out solar activity effects from foF2, and other upper atmosphere parameters, in order to analyze variability due to external forcings in time scales longer than the typical quasi decadal cycle, like trends possibly linked to greenhouse gases increasing concentration or Earth’s magnetic field secular variation. From the results we can see that Mg II, as a EUV solar proxy behaves more stable and in a more suitable way for filtering processes of foF2 solar activity dependence, followed by F10.7.
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