

Correlation between solar EUV proxies during maximum and minimum solar activity periods

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Abstract:

Four EUV solar radiation proxies -Mg II, Lyman alpha flux, F10.7 and Rz- are analyzed during the period 1979-2020 through a correlation analysis and also through their role in ionospheric parameters filtering in particular during maximum and minimum solar activity periods. The linear correlation along the whole period analyzed is greater than 0.95 between each pair of solar proxies but, when sub-periods are considered, this value decreases markedly during maximum and minimum solar activity levels. This result may be due to the random noise part of each series as we show it through a “statistical experiment”. Physical arguments are also presented which may partially explain the correlation decrease.

Session: “Ionosphere and high atmosphere” or “Solar Physics, heliosphere, cosmic rays”

Oral or Poster: No preference