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Lags in in the correlation between the solar activity and upper ionosphere characteristics.

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The upper ionosphere dynamics, electron density, ion composition, and also the for radio broadcast important critical frequency foF2, are correlated with solar activity when using month medians of measured values and the 12-month running means of solar activity. When shorter intervals are studied, lags of different lenght in the solar activity influence are observed. The correlation between the measured value and the solar radiation intensity given by the F10.7 index is influenced by the position of the interval studied in the solar cycle, by the polarity of the main solar dipole field, by geomagnetic activity, by the geomagnetic longitude of the region studied and by changes of the neutral component density there. These influences are studied using data of ionospheric stations situated in a distance of cca 120 deg in geographical longitude from interval of almost 3 solar cycles (1972-2008).