

Multi-time-lag structure in long term variations of cosmic rays and solar activities

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Abstract. Long-term variations of galactic cosmic ray intensity and sunspot number are analyzed in the present report. It has been well known that there is a strong correlation between both data with about one year time-lag of cosmic ray intensities behind sunspot numbers. In the analysis reported at last ICRC 26-th (SH3.2.01), we have presented the relation between them is not a simple correlation with a single lag-time, but a complicated structural correlation with

multiple lag-times. In the present analysis, we try to find a structure of multi-time-lag structure of cosmic ray intensities behind sunspot numbers, by using a cross correlation and cross power spectral analysis. From derived multi-lag-times in the variations, we will be able to speculate the structure of electro-magnetic state affecting galactic cosmic ray propagation in heliomagnetosphere.