STEP-LIKE VARIATIONS OF COSMIC RAYS AND THEIR RELATION TO AN INCLINATION OF THE HELIOSPHERIC CURRENT SHEET

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The large and fast step-like variations in the GCR intensity are examined during both the descending and recovery phases of the 20-23 solar activity cycles. The cosmic ray intensity data sets are from stratospheric measurements in Murmansk, Mirny (Antarctica) and Moscow. At present the GMIRs are considered as a natural explanation of step-like intensity decreases. But the GMIRs are not suitable to explain the rapid intensity recoveries that were as fast as the step-like decreases, for example in 1964, 1971, 1991. According to the ULYSSES measurements, the IMF was increased and much more disturbed within the sector zone and it means that the diffusion coefficients within the sector zone are small (just as inside the GMIR). The changes of the heliospheric current sheet inclination cause the changes in the angular sizes of sector zones and due to that may cause the fast decreases or increases of the GCR intensity. It is also shown the intensity changes immediately after the step-decreases depend upon the IMF polarity. The cosmic ray intensity after the step-decrease tends to recover at $A>0$ and continues to decrease slowly at $A<0$.