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Poster
Cycle changes in solar magnetic fields from minimum to maximum with a period of about 11 years are manifested in all phenomena of solar activity and determine the state of the interplanetary magnetic field and the parameters of the solar wind. On the basis of data from ground-based and space observatories, a study of the influence of variations in solar polar magnetic fields on the parameters of the solar wind during the minima of solar activity of cycles 21-24 has been carried out. The dependencies of the solar wind parameters on the strength of the solar polar magnetic fields are considered separately for each cycle. The influence of the observed general decrease in the polar magnetic field of the Sun in cycles 21-24 on the changes in the parameters of the solar wind and their interdependencies are estimated.
It is shown that the dependencies for different parameters have a different character and differ from cycle to cycle. Whereas at the maxima of solar activity the interplanetary magnetic field and all processes in the interplanetary space are determined by the sectorial structure of the solar magnetic field, the zonal structures of the solar magnetic field dominate at the minima of solar activity. The results showed that the solar wind parameters demonstrate a general decrease in the minimum values from cycle to cycle with the dominance of zonal structures. This is a reflection of the overall decrease in the solar polar magnetic field observed over last cycles.
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