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Magnetospheric turbulense and Dst value

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Multiple results of experimental observations demonstrate the possibility to analyze the auroral magnetosphere and geomagnetic tail as the parts of the turbulent wake formed under the obstacle in the conditions of high value of Reunolds number. The level of turbulence is greatly increased during magnetic storms. The formation of storm time plasma pressure profile during magnetic storm is analyzed. It is shown that the upper limit of the increase of the inner magnetospheric plasma pressure is determined by the condition of the stability of the formed plasma pressure profile. The developed theoretical approach gives the possibility to explain the radial dependence of the storm time plasma pressure profile and the dependence of Dst-variation on the most equatorial position of storm time auroral electrojets.