

Formation of the ion spectrum by their drift at the front of Earth's bow shock

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The formation of the ion spectrum by their drift at the front of Earth's bow shock has been calculated. We show that the shape and size of the shock front considerably reduce the intensity amplitude of reflected ions with energies more 100 keV in comparison with the plane shock model. We obtain that interplanetary magnetic field turbulence in upstream exerts influence on the energy of reflected ions and weak change their intensity amplitude. We establish that magnetic field turbulence in the downstream determines the intensity amplitude providing the multiple returns of the ions to the front and the repetition of their drift.