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Transmission of Alfven waves through the plane fast shock wave.

A. Lubchich, I. Despirak

Polar Geophysical Institute, Apatity, Russia (lubchich@pgi.kolasc.net.ru / Phone: +7-81555-79475)

Ideal MHD approximation has been used for analysis of transmission of the small amplitude forward and backward Alfven waves having an arbitrary incident angle through the plane fast shock wave of arbitrary intensity. In the general case, six emanating waves (entropy wave, forward fast magnetosonic wave, forward and backward slow magnetosonic waves and Alfven waves) arise behind the discontinuity. Generally, the incidence of Alfven wave on a shock also results in arising of shock surface oscillations. In addition to well known kinematic effects caused by these oscillations, we also take into account dynamic effect associated with noninertiality of the local reference frame connected with the perturbed discontinuity. The transition into the noninertial frame from the inertial one, which is connected with the stationary nonperturbed discontinuity, corresponds to emergence of an inertial force field and additional pressure, applied to a perturbed shock surface. The physical ground of inertial force appearance is nonideality of the medium inside the thin front of a real shock wave. This effect essentially influences the solutions of the problems on incident wave interaction with a shock wave (Lubchich and Pudovkin, Phys. Fluids, 2004). Dependence of amplitudes and propagation angles of all emanated waves on the orientation of wave vector of the incident Alfven wave and orientation and intensity of the ambient magnetic field has been analysed.