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Calculation method for modeling of MHD waves interactions with dusty plasma.

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Calculation method of interaction of magnetohydrodynamical waves with dusty plasma in astrophysics is developed in this work. One is not able describe completely an interaction process of plasma with the dust particles in case of using the only hyperbolic systems of equations. But the methods of Godunov type applied to MHD equations are relevant for the study of such processes. Implementation in the area of calculations the moving particles with the grain conditions of reflecting type and conserving the overall courant condition we get MHD shielded plasma model. Taking into account the magnetization, form factor and other properties of the dust particles, their interaction, and including into calculation large (order 100) number of dust particles we make the calculations of the interaction of MHD flows with dust component. MHD higher order Godunov type scheme combined with improved discontinuous solution have been used in calculations. Original grain conditions at dust grains that conserve the stability of the scheme were used.