

The effects of plasma density structure on the propagation of magnetosonic waves: 1-D particle-in-cell simulations

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- **1** Supplementary Figures and Tables
- **1.1 Supplementary Figures**



Supplementary Figure S1. (A), (B), (C) are the scatter plot of protons in the density structures of the case with $\theta = 90^{\circ}$ at t $\Omega_{cp} = 3, 22$, and 32 in (a) $v_x - v_y$ plane, (b) $v_z - v_y$ plane and (c) $v_z - v_x$ plane.



Supplementary Figure S2. (A), (B), (C) are the scatter plot of electrons in the density structures of the case with $\theta = 85^{\circ}$ at $t\Omega_{cp} = 3$, 14, and 27 in (a) $v_x - v_y$ plane, (b) $v_z - v_y$ plane and (c) $v_z - v_x$ plane.