1D MODEL FOR BEAM PLASMA INTERACTION IN THE PRESENCE OF EXTERNAL DENSITY FLUCTUATIONS

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Large amplitude spatially localized Langmuir waves are frequently observed in the solar wind, usually correlated with the presence of suprathermal electron beams. Recent in-situ observations by the TDS instrument equipping the STEREO spacecrafts showed that these localized waves could be interpreted as electrostatic modes trapped in densitycavities present in the solar wind. We present a new theoretical model based on the spectral resolution of the Zakharov's equations in which a term relative to beam particles has been added. This approach enables to reproduce the eigenmode structure of the observed waves fields, and to study the interaction of the trapped waves with a beam of resonant particles.

Solar wind, Langmuir Waves, wave-particle interaction

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