

Magnetosonic mode in anisotropic plasmas

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In anisotropic fluids, there appears field-aligned forces caused by δz , where δz is a field line displacement across the background ones. This force can be expressed as,

$$-(P_{\perp 0}/B_0 - P_{\parallel 0}/B_0) \times \text{Grad}_z(\text{div}(\mathbf{g}_{\perp}))$$

The first term is a magnetic mirror force averaged over particles in volume element. The second term is a net parallel pressure force in changing area of flux tube. We discuss how those two terms contribute to the modulation of fluid density and field magnitudes by taking account of double adiabatic equations of state.