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# Electromagnetic effects on geodesic acoustic modes

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By using the full electromagnetic drift kinetic equations for electrons and ions, the general dispersion relation for geodesic acoustic modes (GAMs) is derived incorporating the electromagnetic effects. It is shown that  $m = 1$  harmonic of the GAM mode has a finite electromagnetic component. The electromagnetic corrections appear for finite values of the radial wave numbers and modify the GAM frequency. The effects of plasma pressure  $\beta_e$ , the safety factor  $q$ , and the temperature ratio  $\tau$  on GAM dispersion are analyzed.

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