

地球前方衝撃波およびマグネットシース領域における低周波波動に対する波動ベクトル解析

津川 靖基 [1]; 加藤 雄人 [2]; 寺田 直樹 [3]; 町田 忍 [4]
[1] 名大 ISEE; [2] 東北大・理・地球物理; [3] 東北大・理・地物; [4] 名大・ISEE

Wave vector analyses on low frequency waves in the terrestrial foreshock and magnetosheath regions

Yasunori Tsugawa[1]; Yuto Katoh[2]; Naoki Terada[3]; Shinobu Machida[4]
[1] ISEE, Nagoya Univ.; [2] Dept. Geophys., Grad. Sch. Sci., Tohoku Univ.; [3] Dept. Geophys., Grad. Sch. Sci., Tohoku Univ.; [4] ISEE, Nagoya Univ.

A variety of plasma waves are generated in the terrestrial foreshock and magnetosheath regions. They may play an important role of dissipation processes of the incident solar wind plasma and energy exchanges through the boundary regions of the magnetosphere. However, their wavelengths cannot be identified uniquely in some cases even if their wave modes are assumed. Wave vector analysis techniques have been developed utilizing multi-point observations [Neubauer and Glassmeier, 1990; Narita et al., 2011]. Recent MMS mission enable us to resolve smaller wavelength in the ion kinetic range [Narita et al., 2016]. We apply the techniques to low frequency waves detected by MMS in the foreshock and magnetosheath regions and identify them as whistler mode, ion cyclotron mode, and magnetosonic mode waves. Based on the results, we estimate the distributions of the wave dispersion relations in the plasma rest frame and discuss the propagation properties of the waves.