## A106a GEOTAILによる温度異方性を考慮したslow-mode衝撃波の解析

○岡部 勝臣(ISAS)、星野 真弘(東大)、平井 真理子(東大)、齋藤 義文(ISAS)、向井 利典(JAXA)、藤本 正樹(ISAS)

Hot and high speed plasmas often observed in the magnetotail, are considered to be produced by the slow shock waves formed at the boundary between the lobe and the plasma sheet. In fact, the existence of the slow shock has been carefully analyzed using a full set of plasma observation data of the GEOTAIL. In the previous slow shock analysis, however, an isotropic temperature has been assumed. It is known that the plasma often shows an anisotropic temperature in the magnetotail, with parallel temperature often larger than the perpendicular temperature. In this presentation, we investigate the slow shock structure with the effect of temperature anisotropy taken into account. We first reexamined the Rankine-Hugoniot relations by taking into account temperature anisotropy. Due to the anisotropy in the downstream, the shock downstream magnetic field increases, while the plasma density, velocity and total temperature decrease compared with the isotropic Rankine-Hugoniot relations. We found that this correction helps us identify successfully more slow shocks than in the previous studies. Then, we classified slow shocks into two types. Type1 slow shocks have isotropic downstream temperature and Type2 slow shocks have anisotropic downstream temperature. In our analysis, 47% of slow shocks were classified as Type2 slow shocks, which, if at all, could only ambiguously be identified in the previous analysis. We also found that Type2 slow shocks have higher shock speed, lower upstream $\beta$ and shock angles that are more parallel.