E116-P023 **Room: Poster Session Hall** **Time: May 29**

Mechanism of anisotropic heating at slow shocks

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Hot and high-speed plasmas that are often observed in the magnetotail are considered to be generated 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 from the GEOTAIL spacecraft. 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 higher than the perpendicular temperature. In this presentation, we investigate the slow shock structure with the effect of temperature anisotropy. We first reexamined the Rankine-Hugoniot relations by taking into account temperature anisotropy. Due to the anisotropy in the downstream region, the shock downstream magnetic field increases, while the plasma density, velocity and total temperature decrease compared to the isotropic Rankine-Hugoniot relations. We found that this correction helps us identify slow shocks more successfully than the isotropic treatment in the previous studies. Then, we carefully checked distribution functions of the slow shock and found that temperature anisotropy plays an important role in heating ions. To investigate the mechanism of anisotropic heating, we carried out a test particle simulation, which shows that anisotropic heating depends on the structure of electric field. We will discuss the mechanism of anisotropic heating and structure of the slow shock.