

## Significance of slow mode disturbance for the substorm development : Evidence and statistics

# Takesi Iijima[1], Aoi Nakamizo[2]

[1] Earth & Planetary Sci.,Kyushu Univ, [2] Earth and Planetary Sci., kyushu Univ

We have investigated a number of substorms by virtue of the GEOTAIL plasma and magnetic field experiments. The noteworthy points include the following :1)stress balance in plasma elements is maintained primarily by thermal pressure-gradient force and magnetic tension force(~tangential stress) with negligible contribution due to inertia force of plasma flow, 2)energy flux of disturbance perpendicular to the background magnetic field comes from the work done by thermal pressure and magnetic pressure perturbations, both of which cancel each other and a nett flux is vanishingly small, 3)parallel energy flux of disturbance is due to the work of thermal pressure perturbation in the direction of the background field and contributes really to remove the pressure pile-up around the neutral sheet .

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