INSTABILITY OF FLANK MAGNETOPAUSE. COMPARISON OF EARTH AND NON-MAGNETIC PLANETS

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Both magnetic (Earth) and non-magnetic planets (Venus) exibit a strong velocity shear at the boundary between magnetosheath flow and internal stagnant magnetosphere in the vicinity of the planetary terminator. The situation when the magnetosheath magnetic field vector is perpendicular to magnetosheath velocity vector is favorable to generate surface waves and even vorticities at the boundary. The paper considers the generation of Kelvin-Helmhotz instability at the Earth flank magnetopause and creation of a thick boundary layer in case when reconnection is impossible. Surprisingly the same effect is observed at the Venusian flank magnetic pile-up boundary. In the last case the vorticities create a modulated flux in the planetary tail and even a modulated energetic neutral particles flow upstream of the bow shock.