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MHD instability of dayside and nightside magnetospheric boundary layers as a source of magnetopause oscillations and MHD waves in dependence on plasma parameters and magnetic field of the magnetosheath

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We consider the Kelvin-Helmholtz instability (KHI) at magnetospheric boundary for different conditions in the magnetosheath at dayside boundary and at geotail boundary. At dayside boundary KH instability is governed by magnetosheath magnetic field longitude with respect to velocity direction component. It gives generation of surface (fast decreasing from the boundary) MHD waves in the range of geomagnetic pulsations. At the distant geotail boundary KHI is developed on oblique (usually not taken into account) supermagnetosonic perturbations with amplitude, weakly decreasing in space in low frequency range ($\sim$1 mHz) without strong dependence on the magnetosheath magnetic field.