Exploring the linear stability of a rotating layer, we have found that a critical layer associated with the thin shear region of the ambient, hyperbolic-tangent profile magnetic field might develop only if that laid close enough to the perfectly conducting (bottom) boundary. The magnetic shear could be modified through the parameter gamma in the argument of the field shape function. The evolved instability in the form of oblique rolls was driven by magnetic reconnection and was identified with the tearing-mode. It was not influenced by the electromagnetic nature of the distant boundary and depended exclusively on the local current distribution. For a large gamma (gamma=O(10) or larger) the solution breaks into two regions, an inner region of thickness O(1/gamma) where the magnetic field changes rapidly, and an outer region above where the field is almost uniform. The problem could be then treated analytically. According to the tearing-mode theory in classical systems, the inner solution is sought as long-wavelength with respect to the width of the critical layer. The outer region is considered to be diffusionless. The obtained solution shows features similar to the one obtained numerically and confirmed relevance of the simplifying physical assumptions made in each region.

Influence of the vertical homogeneous magnetic field was explored numerically. Its addition stabilised the system as it enfeebled the effect of the magnetic shear layer in inducing of motions and caused them to spread outside of the shear region. Also, it changed the originally stationary character of motions to an oscillatory one.