



Magnetospheric Drift-Alfven waves reflected in auroral substorm arcs

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To explain the possible destabilization of a 2D magnetic equilibrium such as the Near-Earth magnetotail, we developed a kinetic model describing the resonant interaction of electromagnetic fluctuations and bouncing electrons trapped in the magnetosphere. A small-beta approximation is used in agreement with a small field line curvature. It has been found that for a quasi-dipole configuration ($L \sim 8 \text{ RE}$), unstable electromagnetic modes may develop in the current sheet with a growth rate of the order of a few tenth of seconds. This instability growth rate is large enough to destabilise the current sheet on time scales often observed during substorm onset. A detailed comparison between auroral arcs observations and the theoretical results of our model was carried out.