



Particle acceleration at a two dimensional dipolarization front

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We consider the particle acceleration at dipolarization fronts that can be formed in the Earth's magnetotail in association with strong reconnection events. We set up an analytical two-dimensional model of the front which is a solution of the full set of Maxwell equation. A test particle simulation is performed to explore the influence of the various physical parameters, which are modelled according to the spacecraft observations. We find that energies up to a few tens of keV can be obtained, in reasonable agreement with observations. Application of this model to the heating of heavy ions in the solar corona are also discussed.