

More magnetic tales

I would like to point out an apparent difficulty in the considerations given so far to the problem of the electric currents which flow in the neutral sheets of magnetic tails. The existence of an electric current implies ions moving one way along the sheet, and/or electrons moving the other. But what happens when these particles reach the 'ends' of the sheet and are lost into the surrounding solar wind? How are they replenished? I suggest that particles must somehow flow into the neutral sheet from the uniform field regions on either side, and point out that plasma flow usually involves the presence of an electric field perpendicular to the magnetic field.

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