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## **Rates of magnetic flux cancellation measured by Hinode/SOT**

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**Abstract.** The specific cancellation rate of canceling magnetic features, defined as the rate of flux cancellation divided by the interface length, is an observational signature of magnetic reconnection in the low atmosphere. This value gives an accurate estimate of the electric field in the reconnecting current sheet. We have measured the specific rates using the magnetograms taken by the Solar Optical Telescope (SOT)/Hinode. As a result, the specific rates determined with SOT turned out to be systematically higher -about four times- than those based on the data obtained by the Michelson Doppler Imager (MDI) aboard the SOHO. This higher value is mainly due to the higher resolution and better sensitivity of the SOT, resulting in magnetic fluxes up to five times larger than those obtained from the MDI. The higher rates of flux cancellation correspond to either faster inflows or stronger magnetic fields of the inflow region in the current sheet, which may have important consequences for the physics of photospheric magnetic reconnection.