Abstract Submitted
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Endogenous Magnetic Reconnection and Associated High Energy Plasma Processes[1] B. COPPI, B. BASU, MIT — The existence of an endogenous magnetic reconnection process in weakly collisional plasmas is proposed that relies on the presence of a significant electron temperature gradient [1] and a local current density gradient within the region where a drastic change of magnetic field topology is produced. The newly identified mode involves widths of the layer in which reconnection takes place that remain relevant even when large macroscopic distances are considered, such as those of interest to space and astrophysics. Given that plasmas in the Universe with considerable electron thermal energy contents are ubiquitous, it makes sense to rely on this process to generate, through magnetic field reconnection, high energy particle populations [1], momentum and angular momentum transport and, in any case, new magnetic field configurations. A depletion of magnetic energy is associated with a suppression of the current density gradient.
B. Coppi, B. Basu and A. Fletcher, *Nucl.Fusion*, **57**, 7 (2017).

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