

Magnetic reconnection in relativistic jets

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Relativistic jets are produced by certain accreting black holes where accumulation of magnetic fields leads to relativistic magnetizations. Magnetic reconnection is one of the most promising mechanisms of energy dissipation and particle acceleration that may operate in the relativistic jets. Magnetic reconnection may be triggered instabilities, in particular the current and pressure driven modes in the presence of toroidal magnetic fields. Relativistic reconnection and instabilities in relativistic jets have been investigated extensively by means of kinetic particle-in-cell simulations. These studies have demonstrated that relativistic jets can be very efficient particle accelerators.

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