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## Magnetic Reconnection in Jet-Accretion disk Systems

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Magnetic Reconnection is currently regarded as a rather important process in magnetically dominated regions of galactic and extragalactic sources like the surrounds of black holes and relativistic jets. In this contribution, we discuss briefly the theory of fast magnetic reconnection, especially when driven by turbulence which is very frequent in astrophysical flows, and its implications for relativistic particle acceleration. Then we discuss these processes in the context of the sources above, showing recent analytical and multidimensional numerical MHD studies that indicate that fast reconnection can be a powerful process to accelerate particles to relativistic velocities, produce the associated high energy non-thermal emission, and account for efficient conversion of magnetic into kinetic energy in these flows.

**Primary author:** SINGH, Chandra Bahadur

**Co-authors:** Dr KADOWAKI, Luis H.S.; Dr KOWAL, Grzegorz; Dr MEDINA-TORREJON, Tania E.; Dr MIZUNO, Yosuke; Prof. DE GOUVEIA DAL PINO, Elisabete M.

**Presenter:** SINGH, Chandra Bahadur

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