

Abstract Submitted  
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**Relativistic Magnetic Reconnection around rotating black holes<sup>1</sup>**

FELIPE ASENJO, Universidad Adolfo Ibáñez, LUCA COMISSO, Princeton University — In recent years, the classical Sweet-Parker and Petschek models have been extended in the special relativistic regime, both for MHD plasmas [1] and two-fluid electron-positron plasmas [2]. Nevertheless, there could be situations, like in the vicinity of black holes, where also general relativistic effects can become important. Here, we calculate analytically the reconnection rate and other relevant quantities in a magnetic reconnection process around a rotating black hole. A striking result is that the black hole rotation is capable to produce an enhancement of the rate at which magnetic reconnection proceeds. [1] Y. E. Lyubarsky, Mon. Not. R. Astron. Soc. 358, 113 (2005). [2] L. Comisso and F.A. Asenjo, Phys. Rev. Lett. 113, 045001 (2014).

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