Abstract Submitted
for the APR15 Meeting of
The American Physical Society

Leptonic cascade around Kerr BHs and the formation of relativistic jets[1] ALEX FORD, BRETT KEENAN, MIKHAIL MEDVEDEV, Univ of Kansas — Relativistic jets from Active Galactic Nuclei (AGN), blazars, quasars and micro-quasars, radio-active galaxies and some other systems host rapidly spinning (Kerr) black holes (BHs). They are powered by Blandford-Znajek mechanism, which converts the BH rotational energy into Poynting flux. This process requires the presence of external magnetic fields brought by accreting gas and highly ionized plasma created *in situ*. Thus, plasma production in the so-called "gap" region of the BH magnetosphere is crucial for the jets to exist. Here we explored numerically the conditions (the ambient photon field, magnetic field strength, BH spin) needed for the cascade for be efficient, and discuss the properties of the astrophysical systems needed to exhibit powerful jets.

[1]Supported by DOE grant DE-FG02-07ER54940 and NSF grant AST-1209665.

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Date submitted: 09 Jan 2015 Electronic form version 1.4