Accretion Disks and Cosmic Rays KEN FOWLER, UC-Berkeley — We model accretion disks as Faraday disks with current and mass flows perpendicular to 2D mean field flux surfaces. We model jets produced by accretion disks as weakly-unstable current flows. We model cosmic ray acceleration arising from jet kink modes producing a runaway ion beam that finally accelerates itself by cyclotron resonance. All of these processes can be unified by an Ohm’s Law in which Spitzer resistivity is replaced by a generalized hyper-resistivity, ultimately yielding several predictions in rough agreement with observations.

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