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A Model of MBH Accretion Disk Dynamo, Jet and Radio Lobe STIRLING COLGATE, HUI LI, PHILIPP KRONBERG, Los Alamos National Laboratory — Stirling Colgate, Hui Li, Philipp Kronberg, LANL. The minimum total energy of radio lobes occurs at equipartition of magnetic energy and relativistic electron energy. Typical total energies, 10⁶¹ ergs challenge Massive Black Hole formation, 10^{62} ergs. This large coherent magnetic flux is substantiated by rotation measures and polarization, and relativistic electrons by Compton x-rays from the cosmic radiation. This coherent flux is produced from a helical flux pinch driven by Keplerian winding, of a quadrupole poloidal magnetic field. The poloidal field is created by a coherent $\alpha\omega$ dynamo in the disk produced by plumes driven by stardisk collisions. Toroidal flux inside the disk is advected through the event horizon, but the poloidal flux accumulates inside and outside the disk. Outside the disk it saturates the helicity production at a value well below the dynamical Keplerian stress. The winding of the external poloidal flux produces the helical jet with a small flux core, stabilized by relativistic run-away current carriers, starved by preferential loss. After current carrier loss the flux core becomes pinch unstable producing the solenoidal current configuration approximating radio lobes.

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