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Vorticity Stabilization of Magnetized Plasma in an Alfven Black Hole. FRIEDWARDT WINTERBERG, University of Nevada, Reno — As in an acoustic black hole where the fluid is moving faster than the speed of sound and where the sound waves are swept along, in an Alfven black hole where the plasma is moving faster than the Alfven velocity, the Alfven waves are swept along and are eliminated as the cause of the magnetohydrodynamic instabilities. To realize an Alfven black hole, it is proposed to bring a plasma into rapid rotation through radially arranged lumped parameter transmission lines intersecting the plasma under an oblique angle, with the rotational velocity exceeding the Alfven velocity. The rotating plasma slides frictionless over magnetic mirror fields directed towards the rotating plasma, with the mirror fields generated by magnetic solenoids positioned at the end of each transmission line. It is then shown that, with this configuration one can realize a thermonuclear dynamo, which also can serve as the analogue of a magnetar.

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