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The role of boundary conditions in the study of the turbulent diffusion of magnetic fields LARA SILVERS, UCSD — In this paper we discuss the role of the choice of the boundary condition in numerical simulations to examine the form of the quenching of the turbulent magnetic diffusivity. We shall present the results of two different models. In the first models we show that if there is no net flux of A^2 through the boundary of the domain then the turbulent magnetic diffusivity will be catastrophically quenched. In the second model we show that it is an advective flux of A^2 through the boundary that could alleviate such a catastrophic quench.

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