Abstract Submitted
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Overview of recend developments in the Madison Dynamo Experiment[1] ELLIOT KAPLAN, MIKE CLARK, KIAN RAHBARNIA, MARK NORNBERG, ZANE TAYLOR, ALEX RASMUS, CARY FOREST, UW-Madison, ERIK SPENCE, PPPL — Generation of large scale, organized magnetic fields from MHD processes, *i.e* dynamo, has been a long studied phenomenon in astrophysical and laboratory systems. The Madison Dynamo Experiment drives a two vortex flow suggested by numerical simulations to dynamo at a modest Magnetic Reynolds number. Since the beginning of the experiment, sets of baffles have been added to modify the properties of the flow in order to make dynamo conditions more favorable. An equatorial baffle breaks up the largest scale turbulent eddies, and a set of six steering baffles modifies the pitch of the flow to maximize magnetic field generation. The expected and realized effects of these baffles upon the induced field are presented. Furthermore, a new diagnostic has been added to measure, directly and locally, the turbulence driven emfs in the experiment. These local measurements corroborate the emfs inferred from global magnetic measurements.

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