

Abstract Submitted
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Turbulence experiment with high controllability in a rotating system for dynamo physics¹ KENICHI NAGAOKA, SHINJI YOSHIMURA, HIDEAKI MIURA, National Institute for Fusion Science, YOUHEI MASADA, Kobe Univ., SHOICHI KAI, YOSHIKI HIDAOKA, KENICHIRO TERASAKA, Kyushu Univ., NOBIMITSU YOKOI, Univ. Tokyo, SAKU TSUNETAKA, MASAHITO KUBO, National Astronomical Observatory of Japan — Magnetic field in space is generated by kinetic energy of plasma in turbulent state (dynamo effect). Pattern formation in rotating fluids can be seen in space plasma, laboratory plasmas and ordinary fluids, and is considered as a key to understand the dynamo effect. Proposed is a new experimental approach of turbulence driven by electrohydrodynamic convection in a rotating system, in which three non-dimensional parameters, Reynolds, Prandtl and Rossby numbers can be continuously controllable. The details of the experimental setup and preliminary results of turbulence will be discussed in the conference. The final target of our project is experimental simulation of convective zone in the sun, which is an expansion of experimental study in a rotating spherical cell performed by F.H. Busse [F.H. Busse, *Chaos*, 4, 123 (1994)] from 2D system to 3D system.

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