Abstract Submitted
for the DFD05 Meeting of
The American Physical Society

**Anisotropy of MHD turbulence at low magnetic Reynolds number.** OLEG ZIKANOV, ANATOLY VOROBEV, University of Michigan - Dearborn, Dearborn, MI, USA, PETER DAVIDSON, University of Cambridge, Cambridge, UK, BERNARD KNAEPEN, Universite Libre de Bruxelles, Brussels, Belgium — Turbulent fluctuations in MHD flows are known to become anisotropic under the action of a sufficiently strong magnetic field. We investigate this phenomenon in the case of low magnetic Reynolds number using DNS and LES of a forced flow in a periodic box. A series of simulations is performed with different strengths of the magnetic field, varying Reynolds number, and two types of forcing, one of which is isotropic and the other limited to two-dimensional flow modes. We find that both the velocity anisotropy (difference in the relative amplitude of the velocity components) and the anisotropy of the velocity gradients are predominantly determined by the value of the magnetic interaction parameter. The effects of the Reynolds number and the type of forcing are much weaker. We also find that the anisotropy varies only slightly with the length scale. The work was supported by the DOE Office of Basic Energy Science and NSF-MRI program.

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Date submitted: 10 Aug 2005 Electronic form version 1.4