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Numerical Study for the MHD Homogeneous Decaying Turbulence under the System Rotation MASAYOSHI OKAMOTO, DAIYU NAKAJIMA, Shizuoka University — In this study the MHD homogeneous decaying turbulence under the system rotation is directly simulated by means of the pseudo-spectral method. The decaying rates of the kinetic and magnetic energy are suppressed due to the rotation effect like that of the HD turbulence. The small-scale anisotropy of the velocity and magnetic fields is reversed in comparison with the weak anisotropy of the Reynolds and Maxwell stresses. The weak transformation of the energy and stress from the velocity field to the magnetic one occurs under the system rotation, but in the small-scale region the magnetic energy is converted into the kinetic energy. In the strong rotation case, the slope of the energy spectrum is steeper than Kolmogorov one. In the strong rotation case, the vortex structures are aligned with the rotation axis.

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