
PEM033-P06

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Magnetohydrodynamic Black Hole Simulations of Time Variations of Blackhole Accretion Disks

Takayuki Ogawa^{1*}, Matsumoto Ryoji¹

¹Chiba University

We present the results of three-dimensional global magnetohydrodynamic simulations of accretion disks by applying the HLLD scheme proposed by Miyoshi and Kusano(2005).

The HLLD scheme extends the HLL scheme by using four intermediate states between the left state and the right state

the contact discontinuity and the tangential discontinuity can be handled.

We combined the HLLD scheme with the CT

(Constrained Transport) scheme for the induction equation.

The code reproduced the results by Machida et al. (2003) obtained

by using the MHD code based on the modified Lax-Wendroff scheme.

We confirmed that the growth of the non-axisymmetric structure and magnetic turbulence inside the disk produce sporadic time variabilities.

Keywords: Accretion disk, MHD