

# Improvement of Yin-Yang Geodynamo Model: Boundary Condition of Magnetic Field

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We have been developing new geodynamo simulation code based on our original spherical grid system named Yin-Yang grid. The Yin-Yang grid is a kind of spherical Chimera grid that is composed of two identical component grid with the same shape and size. The component grid is a part of the usual latitude-longitude grid defined in the spherical coordinate system  $(r, \theta, \phi)$ , by taking only a part its low latitude region; between 45 degree north and south around the equator and 270 degree in the longitude. The Yin-Yang grid has, therefore, quasi-uniform distribution of the grid spacings with no coordinate singularity, in contrast to the usual latitude-longitude grid. It is confirmed that the Yin-Yang grid suits to parallel or vector-parallel supercomputer such as the Earth Simulator. We reported the basic idea of the Yin-Yang grid and its application to the geodynamo simulation in this meeting last year. Now, we are trying to improve some aspects of the simulation model of in this code. In this talk, we will report an improvement of the boundary condition of the magnetic field at the core-mantle interface. The boundary condition is the smooth match to the vacuum field.