Title: Test of numerical schemes in CESE+HLL solar wind model.

Speaker: 李会超

Abstract: The CESE+HLL solar wind model is a hybrid model which employ a Yin-Yang grid system in the inner region to better fit the spherical inner boundary and a Cartesian adaptive mesh refinement (AMR) grid system to catch finer structure in the interplanetary with less computational resource. In order to investigate to what extent diffrerent numerical scheme affects solar wind computation result, five MHD Riemann solvers, including HLLE, HLLC (Li Shentai), HLLC(Linde), HLLD and Roe, the MUCSL reconstruction method and a splitting based MHD scheme are tested in the CESE+HLL model. Bench-mark tests are first implemented to verify code and compare scheme ability. Then the original HLL scheme is altered by those schemes. In this presentation, I will present computation result and draw some conclusion from the test.