

**R68a            The Effect of Rotation on the Dynamical Evolution of Stellar Clusters**

Eliani Ardi(基礎物理学研究所)、Rainer Spurzem(ARI, Heidelberg)、嶺重慎(基礎物理学研究所)

The influence of rotation on the dynamical evolution of collisional single-mass stellar systems up to core-collapse is investigated by using N-body simulations. As initial models, we employ rotating King models which are characterized by dimensionless central potential parameter  $W_0$  and the rotation parameter  $\omega_0$ .

Our results show expansion of mass shells larger than 10 percent and contraction of the inner shells. Stars with lower angular momentum condense into the core while the stars with higher angular momentum drive to the outer part of the system. Although angular momentum is transported outwards, the core is rotating even faster than before, as predicted by gravo-gyro catastrophe theory.

We confirm that rotation plays an important role in accelerating the core-collapse, as predicted by numerical solution of an orbit-averaged 2D Fokker-Plank equation. Large amount of initial rotations develop high density cores and produce hard-binaries more effective than the non-rotating ones.