

**BLACK HOLES IN DENSE STAR CLUSTERS**  
**Aspen Center for Physics**  
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TITLE: Direct N-body Simulations of Dense Star Clusters

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Computer Simulations of dense star clusters with and without central black holes done by team members of the Silk Road Project at NAOC(<http://silkroad.bao.ac.cn>) in Beijing are presented. They are applied to globular clusters and galactic nuclei. This problem couples gravothermal evolution of dense star clusters with star accretion on black holes and their relativistic dynamics. We discuss different stellar dynamical methods (Fokker-Planck based statistical or Monte Carlo models and direct N-body). Preliminary results from large direct N-body models of globular clusters (the million body simulation) will be shown and an accompanying poster by Long Wang et al. provides more details. If time permits a brief overview of our experiences with different kinds of hardware accelerators will be given (GPU, Intel Phi).