

BLACK HOLES IN DENSE STAR CLUSTERS
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POSTER TITLE: NBODY6++GPU Ready for Million-Body Globular Cluster Simulation – Black Hole Evolution

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Direct N-body simulation help to obtain accurate and detailed information about the dynamical evolution of star clusters. They enable comparisons with analytical models and Fokker-Planck or Monte-Carlo methods. NBODY6++ is the extension of well-known NBODY6 code. It's designed for large particle number simulation on supercomputers. We present NBODY6++GPU, an optimized version of NBODY6++ with improved hybrid parallelization methods (MPI, GPU, OpenMP and AVX/SSE), to accelerate large direct N-body simulation and in particular to solve the million-body problems. We provide the first results of black hole evolution from 4 realistic globular cluster simulations with initially a million particles.