Abstract Submitted for the DNP07 Meeting of The American Physical Society

System Size Dependence of  $\phi$ -meson Production at RHIC XINGHUA SHI, STAR COLLABORATION — The results on  $\phi$ -meson production in Au+Au collisions and comparison to model calculation indicate that the  $\phi$ mesons are produced by coalescence of thermalized s-quarks in central collisions. The observation of  $\phi$ -meson elliptic flow in non-central collisions and its magnitude at intermediate  $p_T$  being similar to other mesons has been considered as a clear signature of partonic collectivity at RHIC [1]. The Cu+Cu collisions provide a tool to probe the system size dependence of the  $\phi$ -meson production and collision dynamics at RHIC. In this talk we will present the STAR preliminary results on the  $\phi$ -meson production in Cu+Cu collisions at both 62.4 and 200 GeV from the STAR Collaboration. The transverse mass spectra, particle ratios, the strangeness enhancement and elliptic flow of  $\phi$ -mesons will be compared with the results from the Au+Au collisions at same beam energy in order to understand the system size dependence of  $\phi$ -meson production in high-energy collisions at RHIC.

Xinghua Shi

Date submitted: 03 Jul 2007

Electronic form version 1.4