Abstract Submitted for the DNP07 Meeting of The American Physical Society

Heavy Meson Dynamics in Ultra-Relativistic Heavy-Ion Collisions ALEJANDRO CACERES, Duke University — Heavy-ion collisions measured at RHIC have produced a novel state of ultra-high temperature and density matter called the strongly interacting Quark-Gluon-Plasma (sQGP). One of the most anticipated new measurements at RHIC centers on hadrons containing heavy quarks (i.e. charm/bottom quarks). These quarks are produced in form of charm-anticharm and bottom-antibottom pairs in hard pQCD interactions early in the time-evolution of the collision. In the absence of a QGP they would hadronize to form charmonium or bottonium states (i.e. J/Psi). However, color screening in the QGP may lead to suppression of such states -one observes the formation of D and B meson. The knowledge of the reaction dynamics of J/Psi and D mesons in the late hadronic phase of a heavy-ion reaction is crucial for the understanding of properties of the QGP and properties of heavy-quarks propagating through. For our analysis we employ a hadronic transport model, UrQMD, into which we have incorporated heavy-meson rescattering cross sections. We present an analysis of D meson and J/Psi collision rates, spectra and yields in the framework of the model and discuss their implications for measurements at RHIC.

> Alejandro Caceres Duke University

Date submitted: 01 Aug 2007

Electronic form version 1.4