Abstract Submitted for the DNP16 Meeting of The American Physical Society

Heavy flavor studies at forward and backward rapidities in Cu+Au collisions with PHENIX detector. CESAR DA SILVA, Los Alamos National Lab, PHENIX COLLABORATION — Asymmetric Cu+Au collisions at  $\sqrt{s_{NN}}=200$  GeV performed at RHIC in 2012 open an opportunity to study particle yields in the presence of different mixtures of initial and final state nuclear effects by using probes measured from negative to positive rapidity regions. Heavy flavor yields may be affected by initial state effects on gluons and energy loss in the final state hot medium. The 2012 run was the first where the Forward Vertex Detector (FVTX) was operating. This detector allows the identification of D and B mesons from displaced vertex measurements. Results on B-meson nuclear modification through its J/ $\psi$  decay channel will be presented along with the status of the analysis of semi-leptonic decays of charm and bottom yields.

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Date submitted: 01 Jul 2016

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