

Abstract Submitted
for the DNP19 Meeting of
The American Physical Society

Measurement of the suppression and azimuthal anisotropy of heavy flavor muons in lead-lead collisions at 2.76 TeV and proton-lead collisions at 5.02 TeV with the ATLAS detector¹ LUKE KRAUTH, Columbia University, ATLAS COLLABORATION — ATLAS measurements are presented on the production of muons from heavy-flavor decays in pp and Pb+Pb collisions at 2.76 TeV and in p+Pb collisions at 5.02 TeV. The measurements are performed over the transverse momentum range $4 < p_T < 14$ GeV. Backgrounds arising from in-flight pion and kaon decays, hadronic showers, and mis-reconstructed muons are removed using a template-fit procedure. The heavy-flavor muon differential cross-sections and per-event yields are measured in pp and Pb+Pb collisions, respectively. The nuclear modification factor R_{AA} is observed to be independent of p_T within uncertainties and to be less than unity, which indicates suppressed production of heavy flavor muons in Pb+Pb collisions. The flow harmonics v_n for such heavy-flavor muons are also measured in Pb+Pb and p+Pb collisions as a function of p_T and centrality or event-multiplicity. These measurements provide insight into the energy loss mechanism of heavy quarks as they propagate through the hot, dense medium produced in heavy ion collisions, and can help determine if such a medium is produced in p+Pb collisions.

¹DOE-FG02-86ER-40281

Luke Krauth
Columbia University

Date submitted: 27 Jun 2019

Electronic form version 1.4