

Abstract Submitted  
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**STAR beam energy scan phase II and the iTPC upgrade**<sup>1</sup> FLEM-MING VIDEBAEK, Brookhaven National Laboratory, STAR COLLABORATION — The second phase of the Beam Energy Scan at RHIC will occur in 2019-2020 and will explore with precision measurements in the part of the QCD phase diagram where baryon densities are high. The measurements will be possible with an order of magnitude better statistics thanks to the electron cooling upgrade of RHIC, and the addition of STAR upgrades. One of these upgrades is the replacement of the STAR inner TPC sector (iTPC). The upgrade will increase the rapidity acceptance for identified hadrons by about 40%. The talk will discuss progress for the iTPC construction, both mechanical and electronics development and the current schedules. Some of the key physics measurements Expected results of some of the key measurements, kurtosis of net-protons that could pinpoint the position of a critical point, measurements of directed flow of baryons vs. energy that might prove a softening of the EOS , and chiral restoration in the di-lepton channel will be presented.

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