

# Commissioning of the sPHENIX Time Projection Chamber

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## Abstract

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The Time Projection Chamber (TPC) is the main tracking detector in sPHENIX. Charged particles which pass through the TPC ionize the gas, with the transverse position being given by the readout pad and the time for the ionization electrons to drift to the endcaps defining the z position. The ionization electrons are then clustered together in order to track particles and determine their momenta. Commissioning of the sPHENIX TPC began in May 2023 using cosmic rays, lasers, and beams both with and without the magnetic field. The Front End Electronics are performing well with low noise and high live rates. This talk will discuss the commissioning progress of the sPHENIX TPC including ongoing work to resolve issues with GEM deformation, validate the working point of the GEM stack, and establish zero-suppressed data operation.