

# Front End Readout for the sPHENIX Time projection chamber

The sPHENIX is the upgrade project of the PHENIX detector whose operation has just ended. This upgrade project mainly focuses on the detailed measurement of the jets and Upsilon's.

We have proposed to build a time projection chamber (TPC) as the main tracker for the sPHENIX, which has a radial coverage of 20 cm to 78cm with rapidity coverage of  $|\eta| < 1.1$  and full azimuth. The number of readout channels will be  $\sim 200K$ , and the raw data volume is expected to reach as much as  $\sim 4Gbits/sec$ . In order to fully exploit the data within the limitation of the bandwidth of the end tape device, we need to introduce a new continuous readout scheme followed by a fast data processing system.

In this presentation, we will show the initial design of the front end readout scheme for the sPHENIX TPC.

## Preferred Track

Future Experimental Facilities, Upgrades, and Instrumentation

## Collaboration

sPHENIX

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**Session Classification:** Poster Session