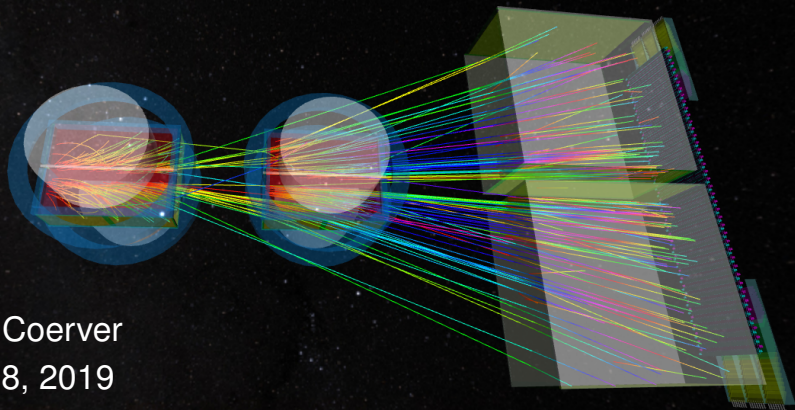


# Upgrading the SHINE Local TPC Data Acquisition System



Anna Coerver  
July 18, 2019

Introduction to NA61/SHINE

SHINE 2020 Upgrade

Data Acquisition Upgrade

Travels



# SHINE: SPS Heavy Ion and Neutrino Experiment

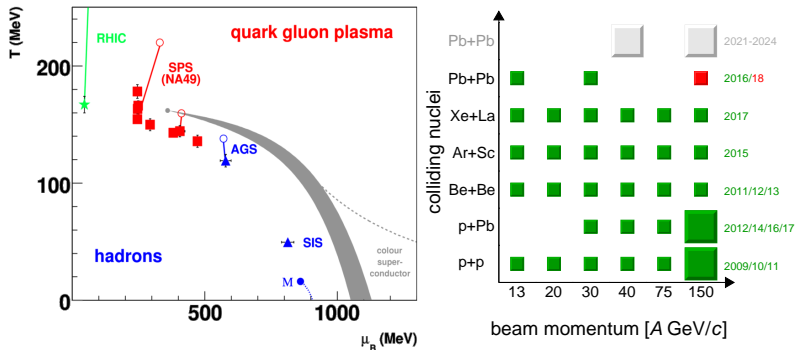


Figure: Left: Phase diagram of strongly interacting matter. Right: Coverage of past (and future) data taking runs.

# NA61/SHINE 2020 Upgrade

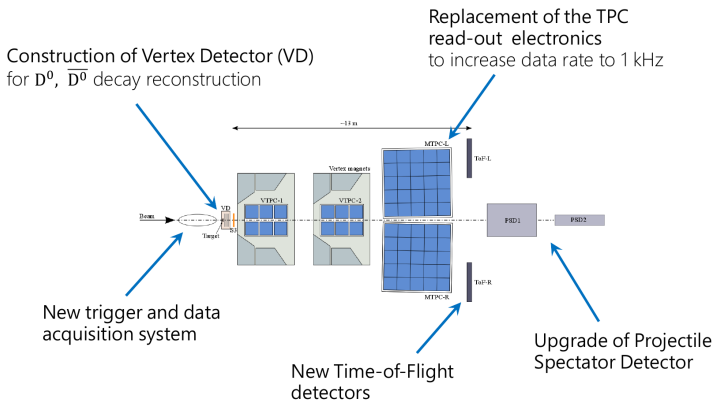


Figure: NA61/SHINE experiment schematic

# Upgrading the Time Projection Chamber (TPC) Data Acquisition System

My project: to prepare a simulated data flow to the online reconstruction system

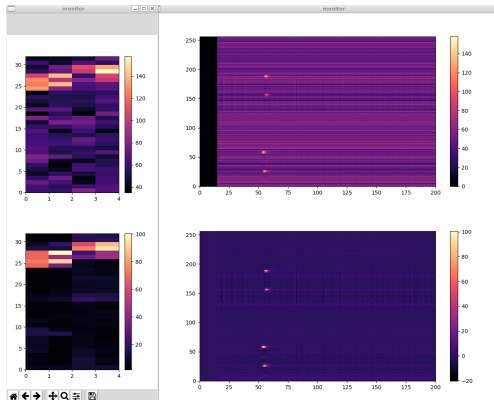
- Set up a miniature TPC and take data
- Develop software to feed this data to online reconstruction system

# TPC Set-up



- Trigger system: two layers of scintillators and photomultiplier tubes
- Detector: miniature TPC
- Readout electronics: 4 cards of 32 channels each

# Online Event Display (particle tracks!)



**Figure:** Left: Pads vs. channels histogram. Right: Waveform plot of time vs. channel.

# Travels!

- Annecy
- Frankfurt
- Chamonix this weekend
- Vienna next weekend
- Lots of swimming in the lake!







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