

Project Goal:

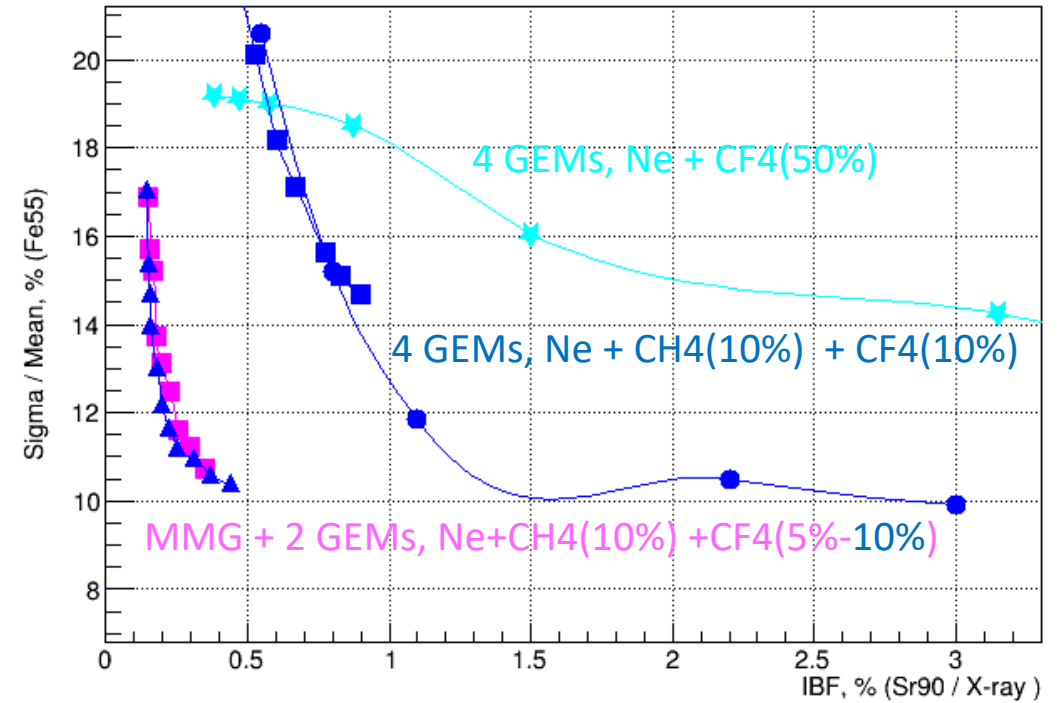
Options for Gain Elements for High Rate Time Projection Chambers

MPGD for Tracking and PiD.

Study and select optimal Gas Mixtures.

R&D, Prototypes, Mass Production, Test, Calibration,
Certification, and Utilization.

Relativistic Heavy Ion Group, Wright Lab, Physics Department,
Yale University.



Resources Needed:

Machine Shop & Student Machine Shop
ITS software library & Computing support
Mechanical Engineers and Technician support
Electronics Shop and Engineers

Project Leader:

Dr. Nikolai Smirnov
(Caines-Harris Group)

Current Status:

We have two Laboratories and a “Clean Room” in “active” use.

-- Supporting the ALICE Time Projection Chamber (TPC) team at the CERN Large Hadron Collider as a stand-alone and the only available R&D and test laboratory in ALICE during installation and commissioning of the TPC readout chambers.

Future Prospects:

-- Continue investigations of a possible high-rate TPC option, its gain elements and gas mixtures for the STAR experiment at Brookhaven Laboratory, the future sPHENIX experiment at Brookhaven, and for future detectors at the Electron Ion Collider (EIC) and Linear Collider.

-- Currently presenting reports and presentations on the progress and developments to these various groups/experiments.

-- Continue developing designs and operational parameters for construction of new detectors for the EIC expected to come online in 2030. This is a critical issue for the ongoing preparation of the technical design report for detector systems for the EIC.