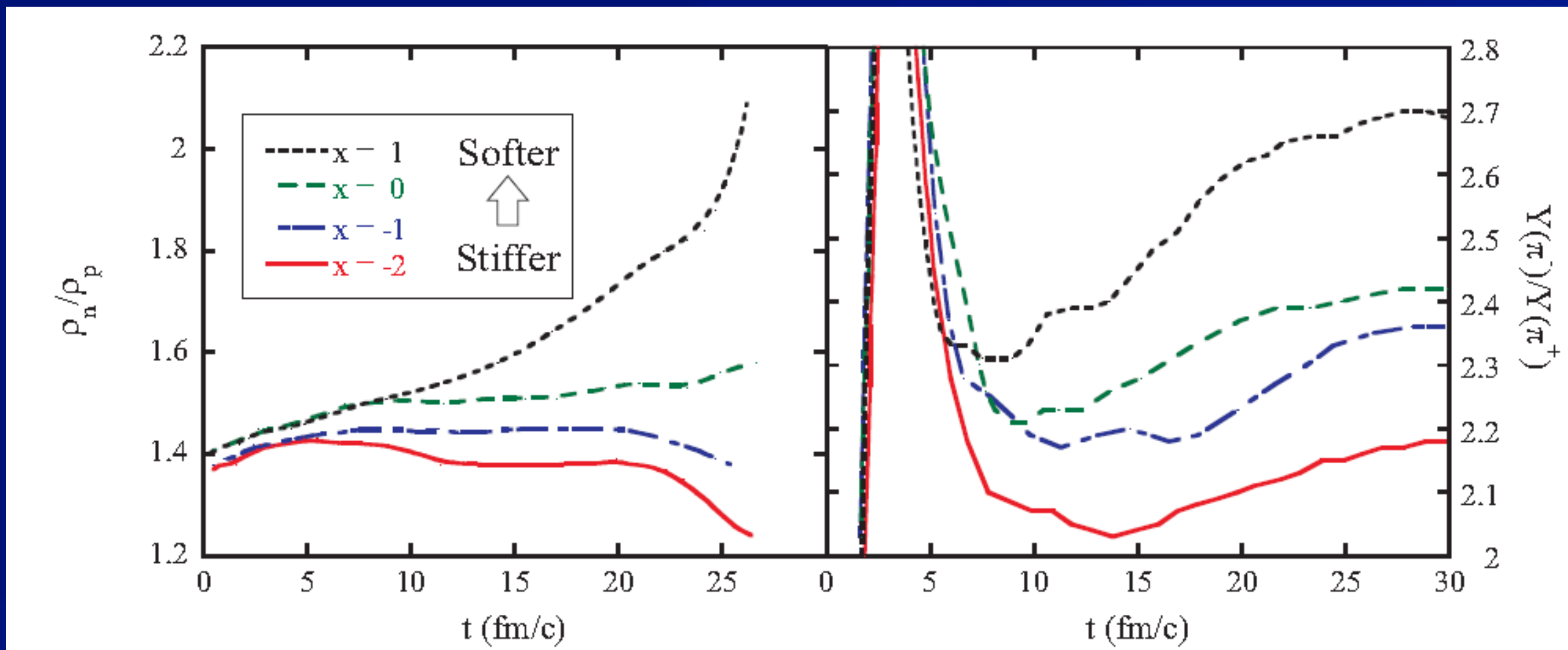


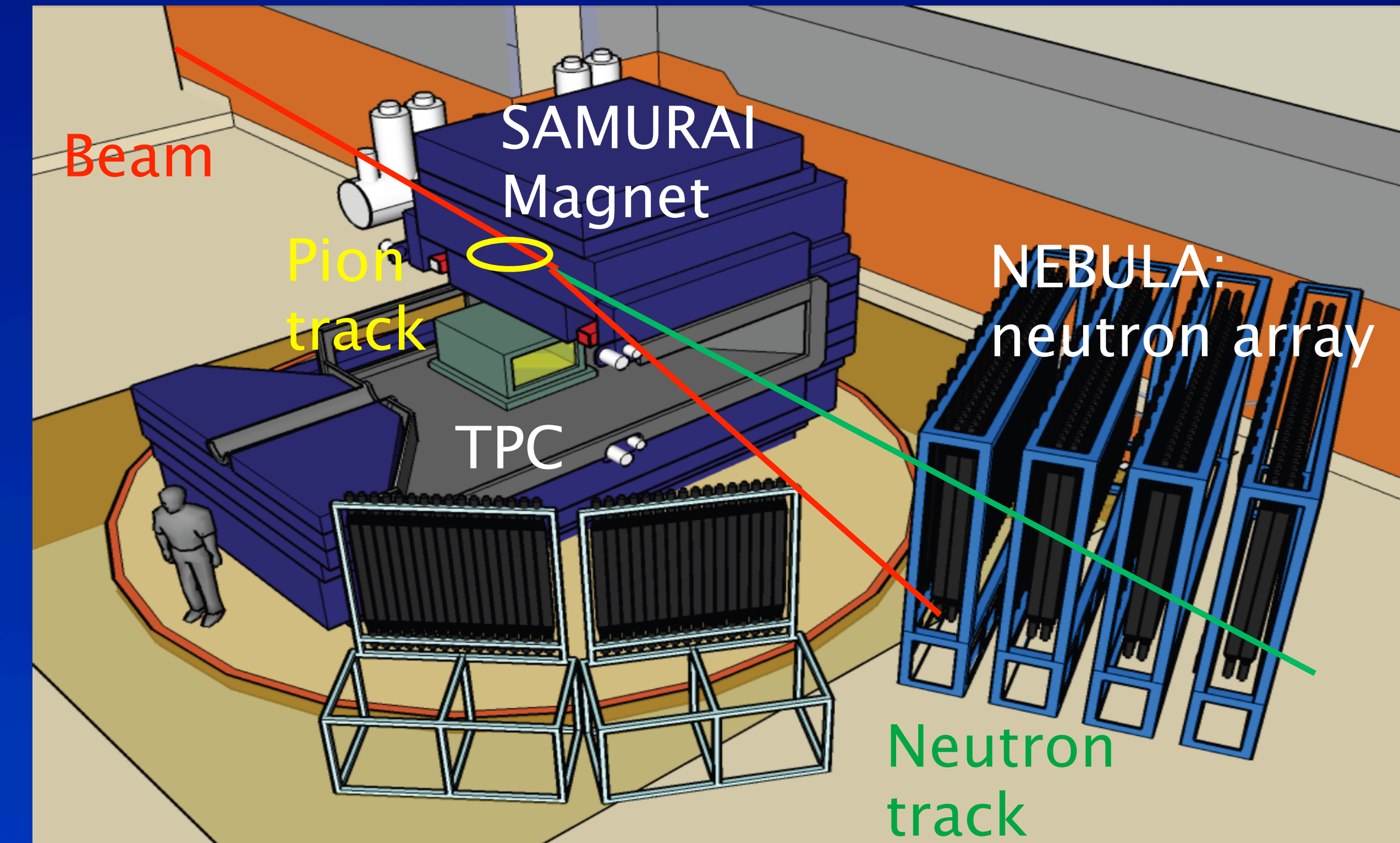
Constraining the Symmetry Energy from Heavy-ion Collisions



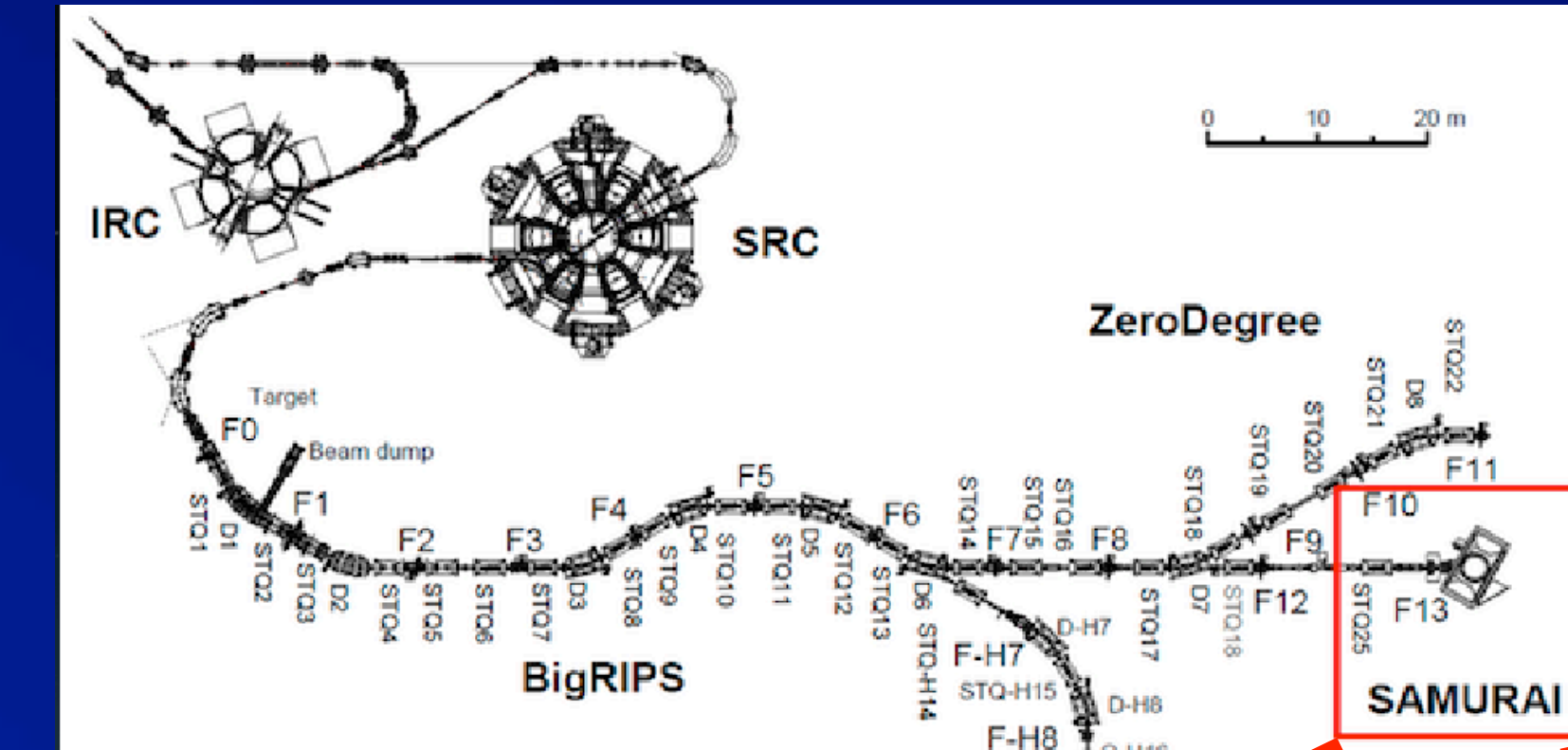
Noritsugu Nakatsuka for the SAMURAI TPC collaboration



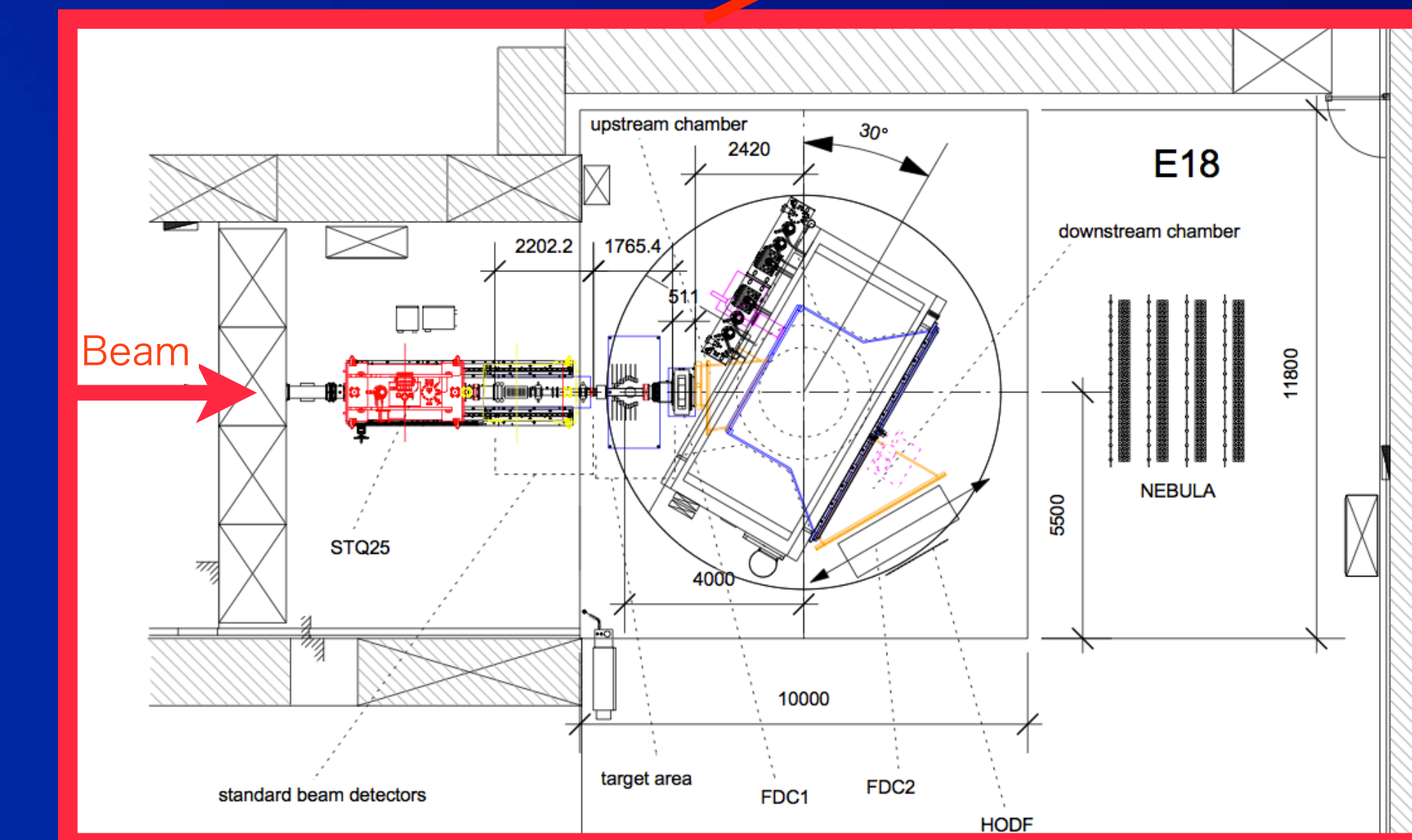
↑ Each line shows the charged pion yield ratio with respect to the different EOS. Pions produced from heavy-ion collisions are predicted to be sensitive to the symmetry energy.



TPC will be coupled with SAMURAI magnet & RIKEN RIBF Facility.



BigRIPS: Fragment separator



SAMURAI: Large gap & acceptance Spectrometer

The experiment will use neutron-rich & high intensity beam from RIBF.

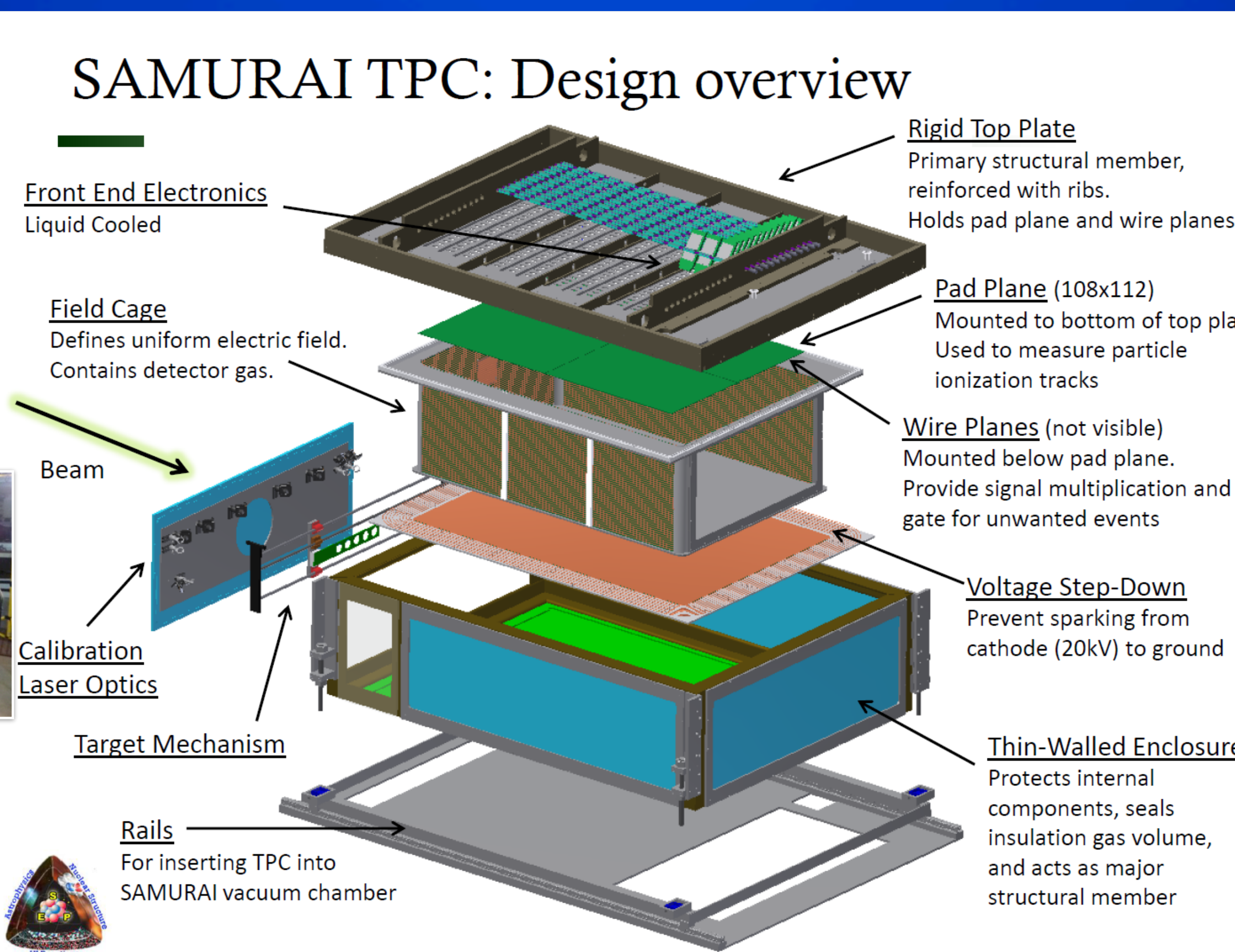
Experimental Setup



Heavy-ion Collisions

The Latest Status of TPC

The construction has been completed at MSU/NSCL.



Design values	
Pad plane area	134x86cm
Number of pads	108x112=12096
Pad size	12x8mm
Drift length	53cm
Gas	P10 at 1atm
Magnet setting	0.5T
Beam+target	132Sn+124Sn etc

Wire Planes



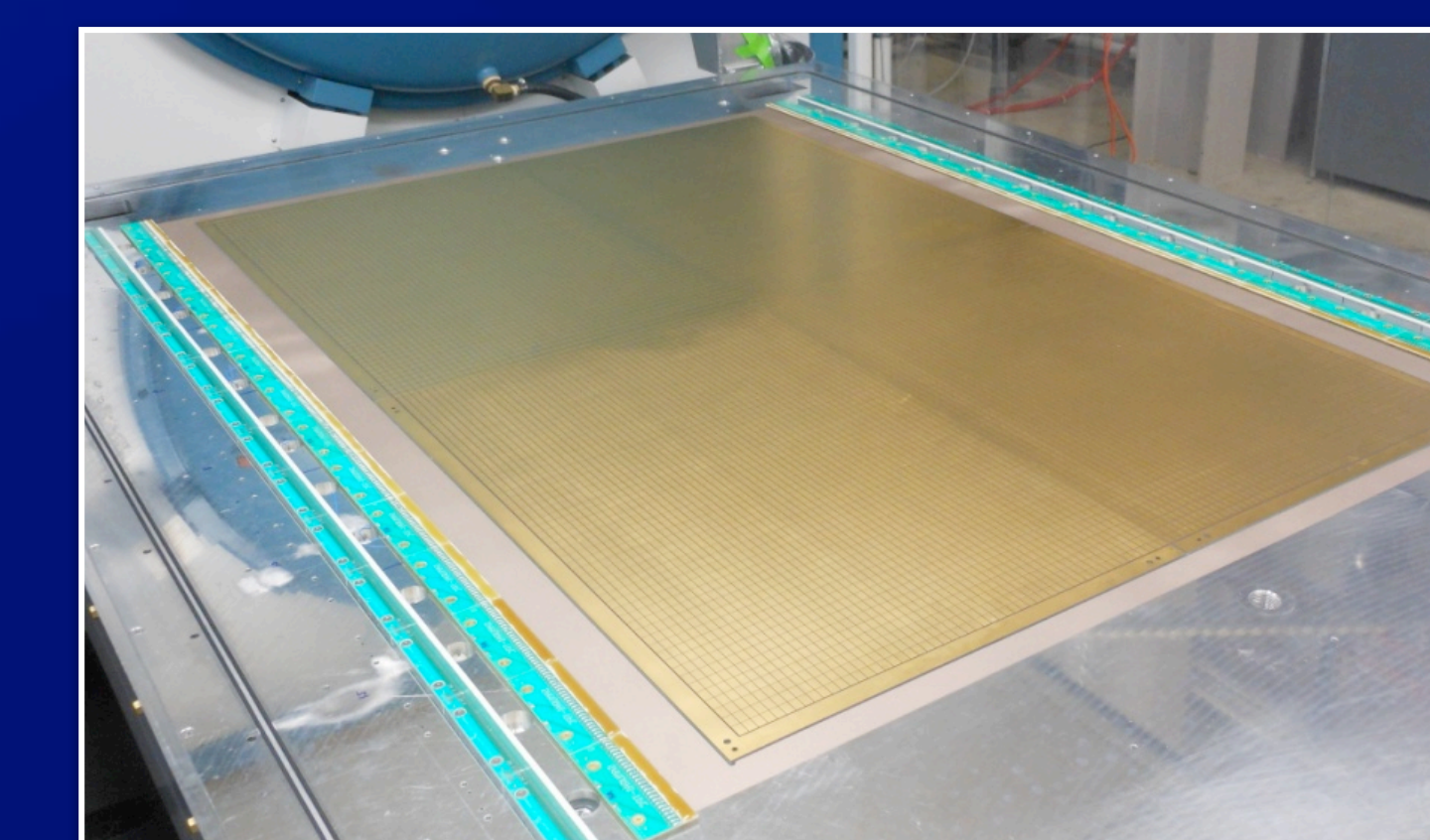
Voltage Step-Down



Rigid Top Plate



Pad Plane

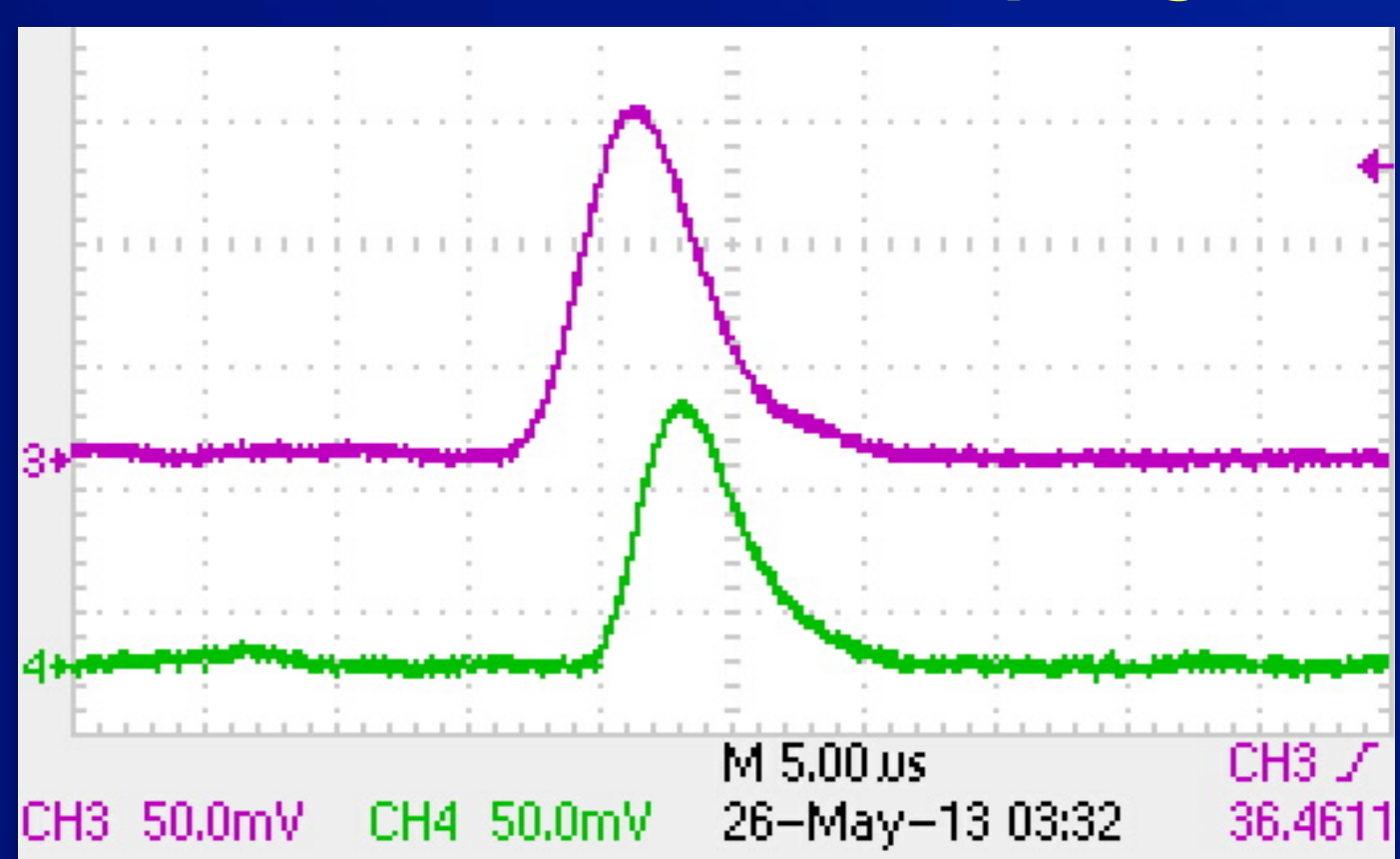


Proposed Day-one Experiment with TPC

Probe	Devices	E_{lab}/A (MeV)	Part./s	Possible Reactions
$\pi^+\pi^-$, p, n, t, ^3He	TPC, Nebula	300	10^4-10^5	$^{132}\text{Sn}+^{124}\text{Sn}$, $^{132}\text{Sn}+^{112}\text{Sn}$

We propose to use neutron-rich tin isotope beam produced at RIBF.

First cosmic ray signals

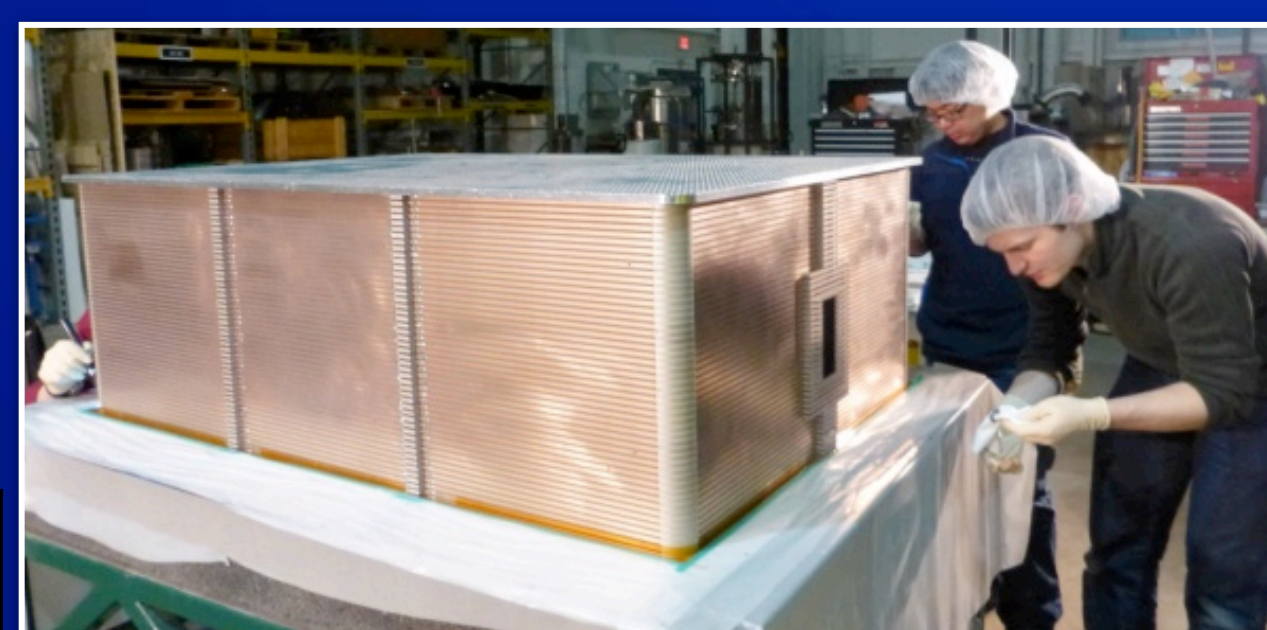


Now the TPC's under test with cosmic ray.

Front End Electronics



Field Cage



Thin-Walled Enclosure

