

Discussion

Inputs from physics

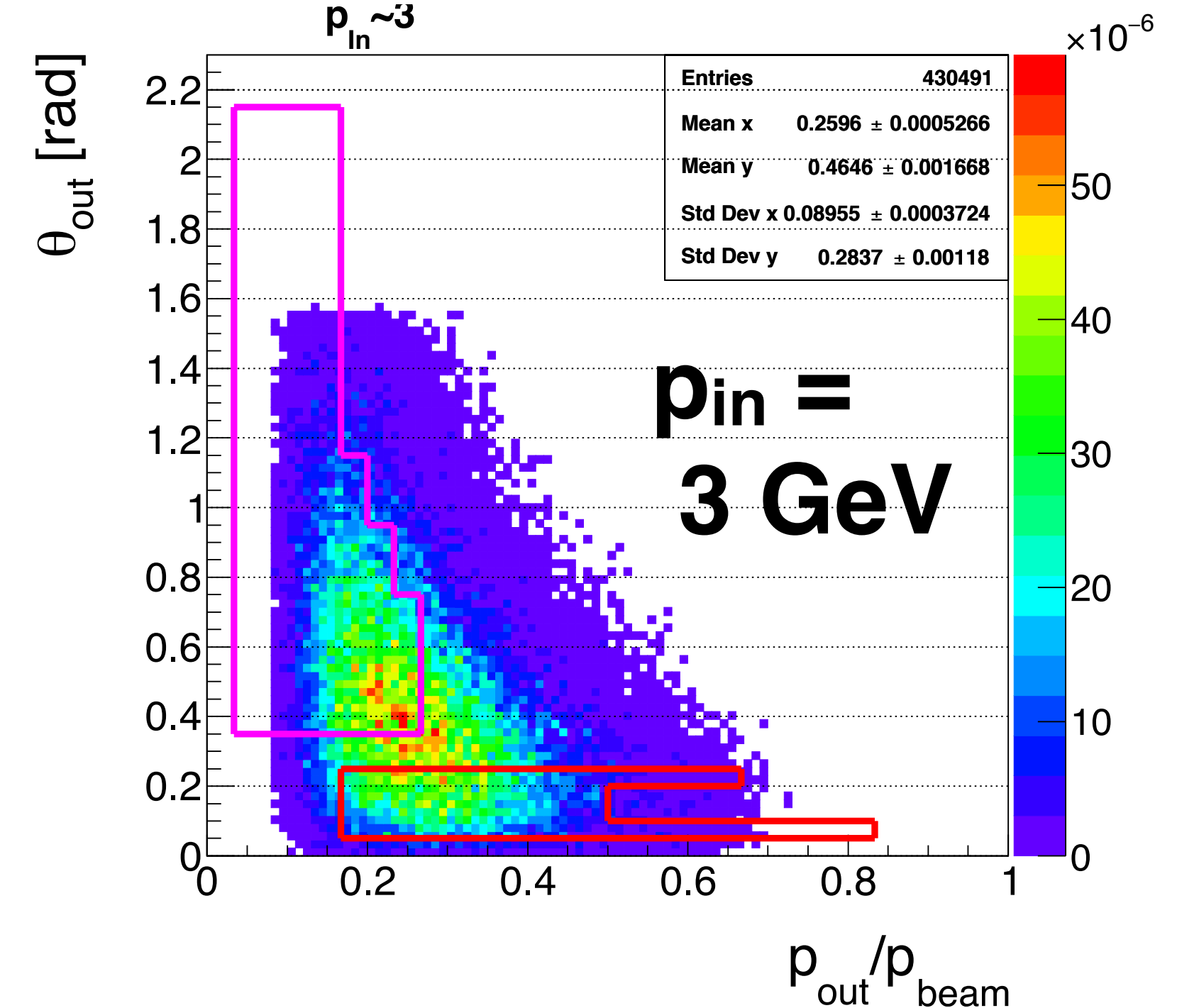
- SK oscillation analysis
 - CP symmetry $\nu_e/\bar{\nu}_e$ and $(\nu_\mu+\bar{\nu}_\mu)/(\nu_e+\bar{\nu}_e)$ in 0.1 - 1 GeV energy range
 - Mass hierarchy $(\nu_\mu+\bar{\nu}_\mu)/(\nu_e+\bar{\nu}_e)$ in 1 - 10 GeV energy range
- Supernova relic neutrino measurement and ν -O cross-section measurement.
 - Absolute energy flux in < 100 GeV and more
- Astronomical neutrino observation
 - Absolute flux $> \sim 100$ TeV
 - Large contribution from Kaon and D mesons.

Update of models

- All three models are going to update with accelerator data and muons by different approaches.
- Honda model
 - Originally tuned with Muon data
 - Going to tune with accelerator data
- Bortal model
 - Update the tune with accelerator data
 - Going to tune with accelerator data
- Anatoli-group model
 - Working with muon and accelerator data in parallel.
- Global fit approach commented by Anatoli
- Contribution of muon decay on ground in < 100 MeV neutrino will be implemented in Honda model soon.

phase space coverage for $E_\nu=0.3$ GeV

Sato-san's slide

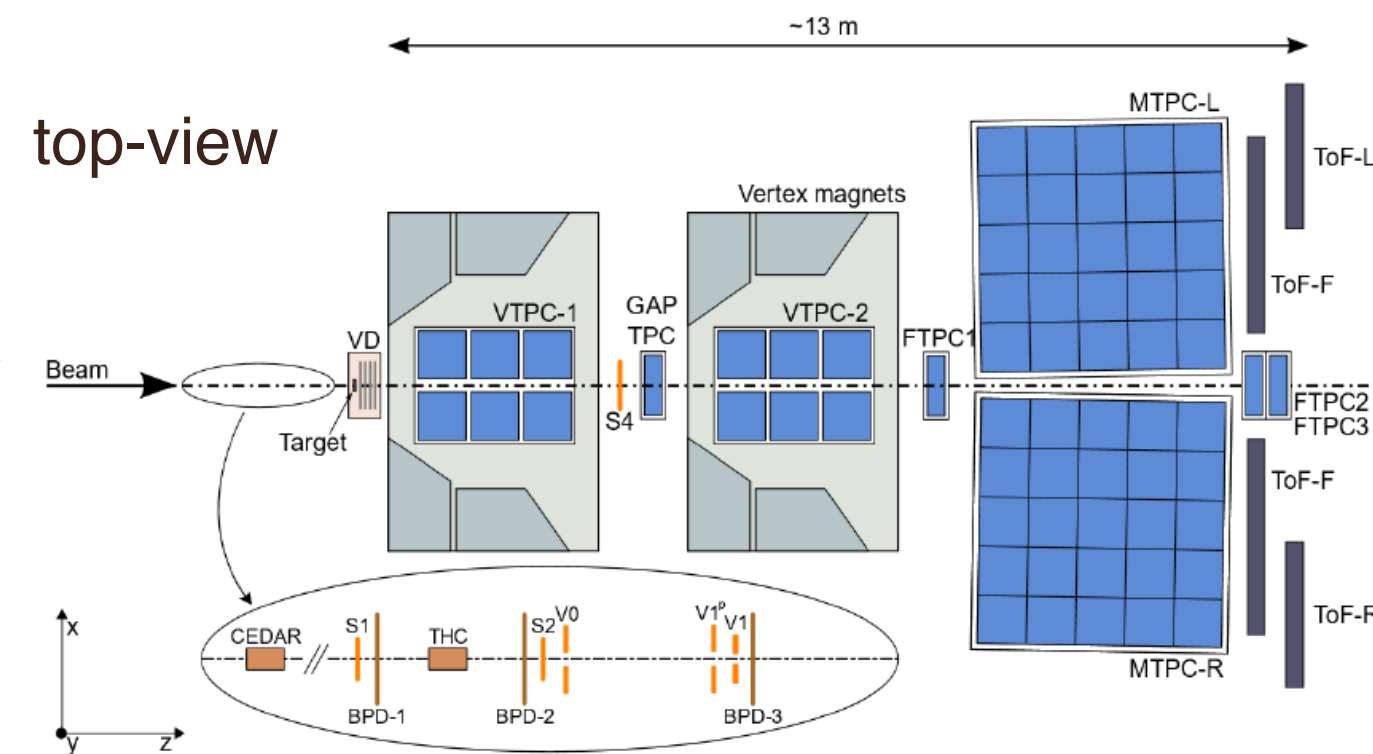


Accelerator experiment

- Fixed target experiment

NA61

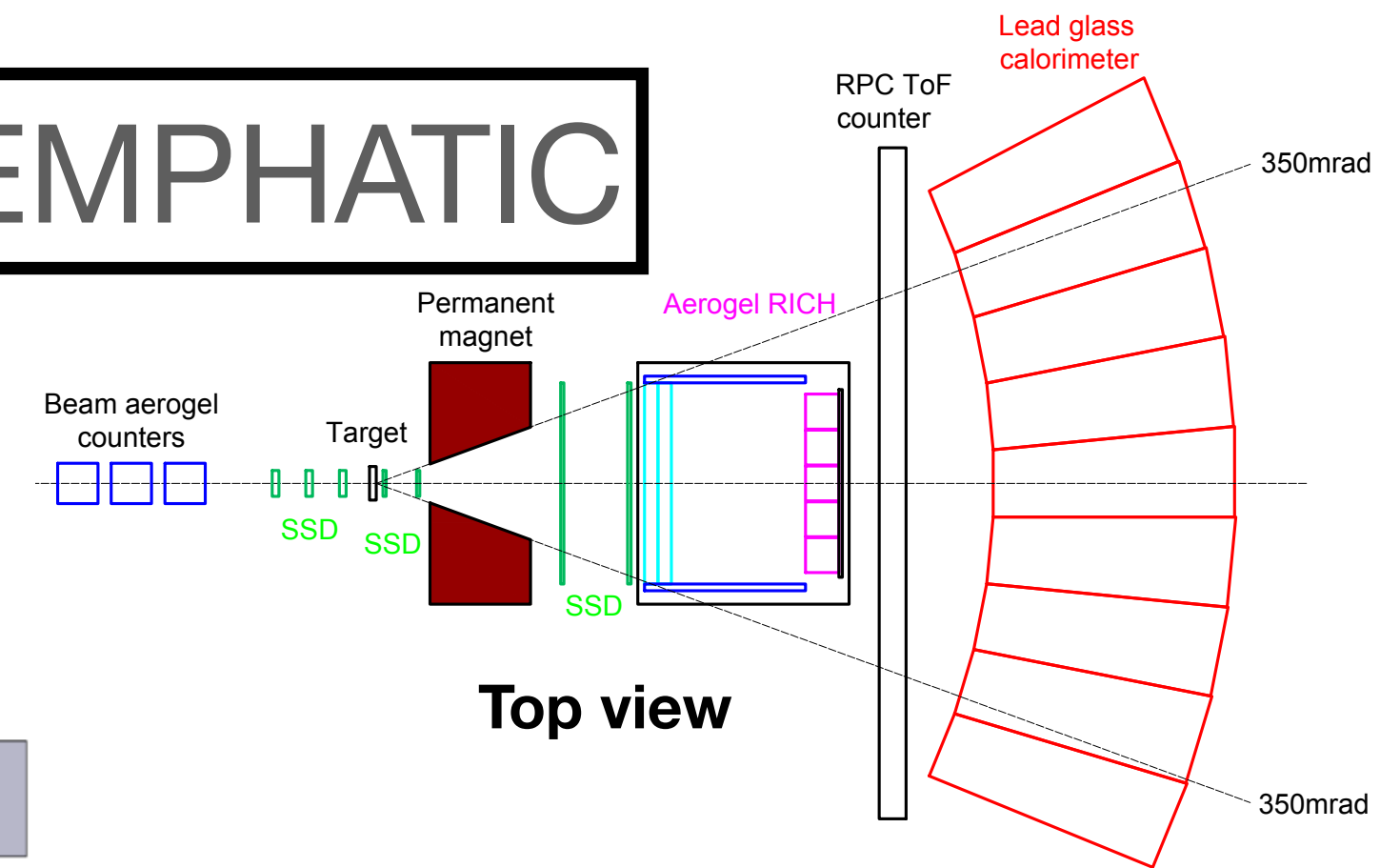
12-350 (400) GeV p,π,K beam
New low energy beam line for 1-20 GeV



Nagai-san's slide

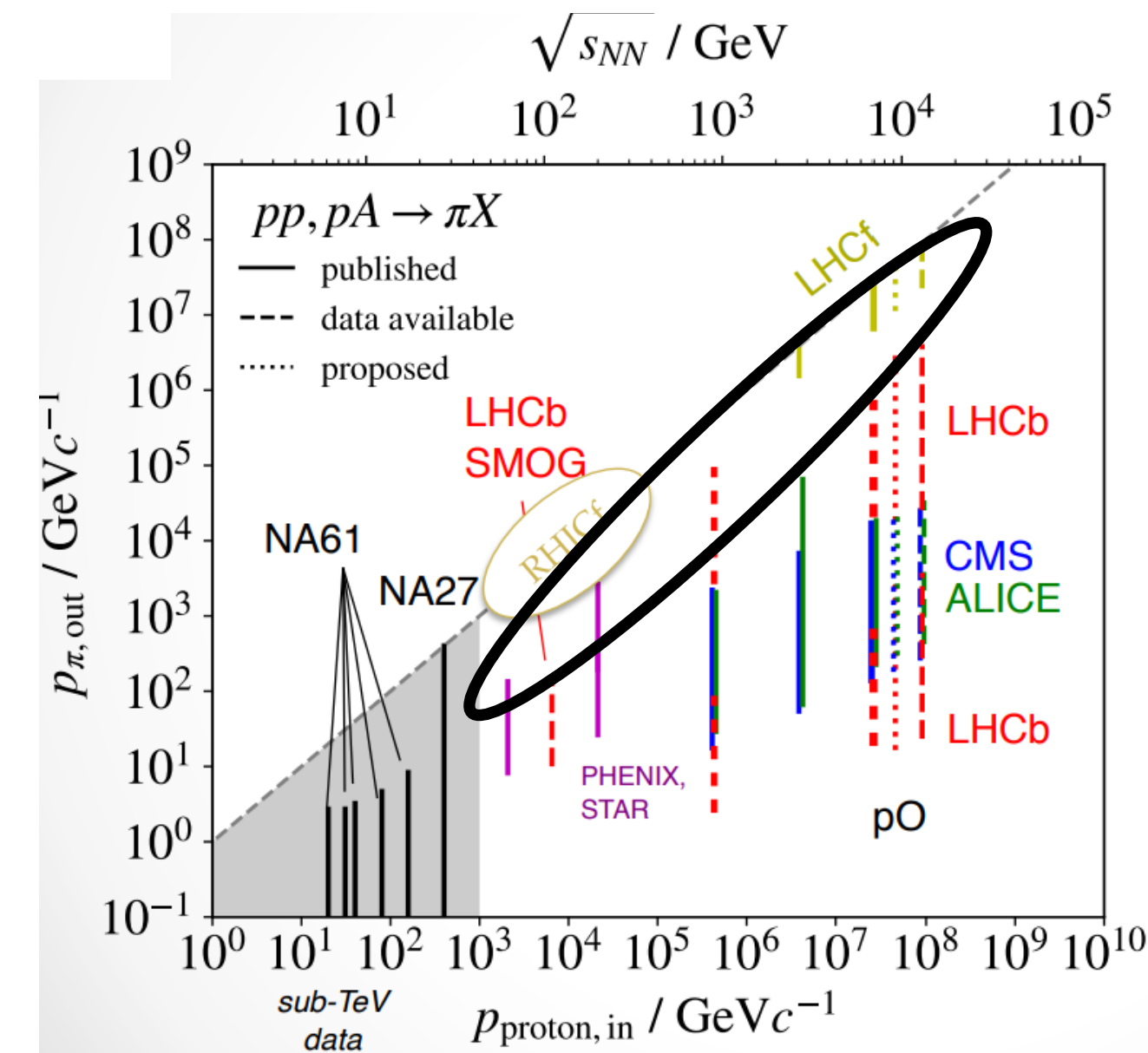
- High energy interaction by collider experiments

EMPHATIC



1-15 GeV proton beams

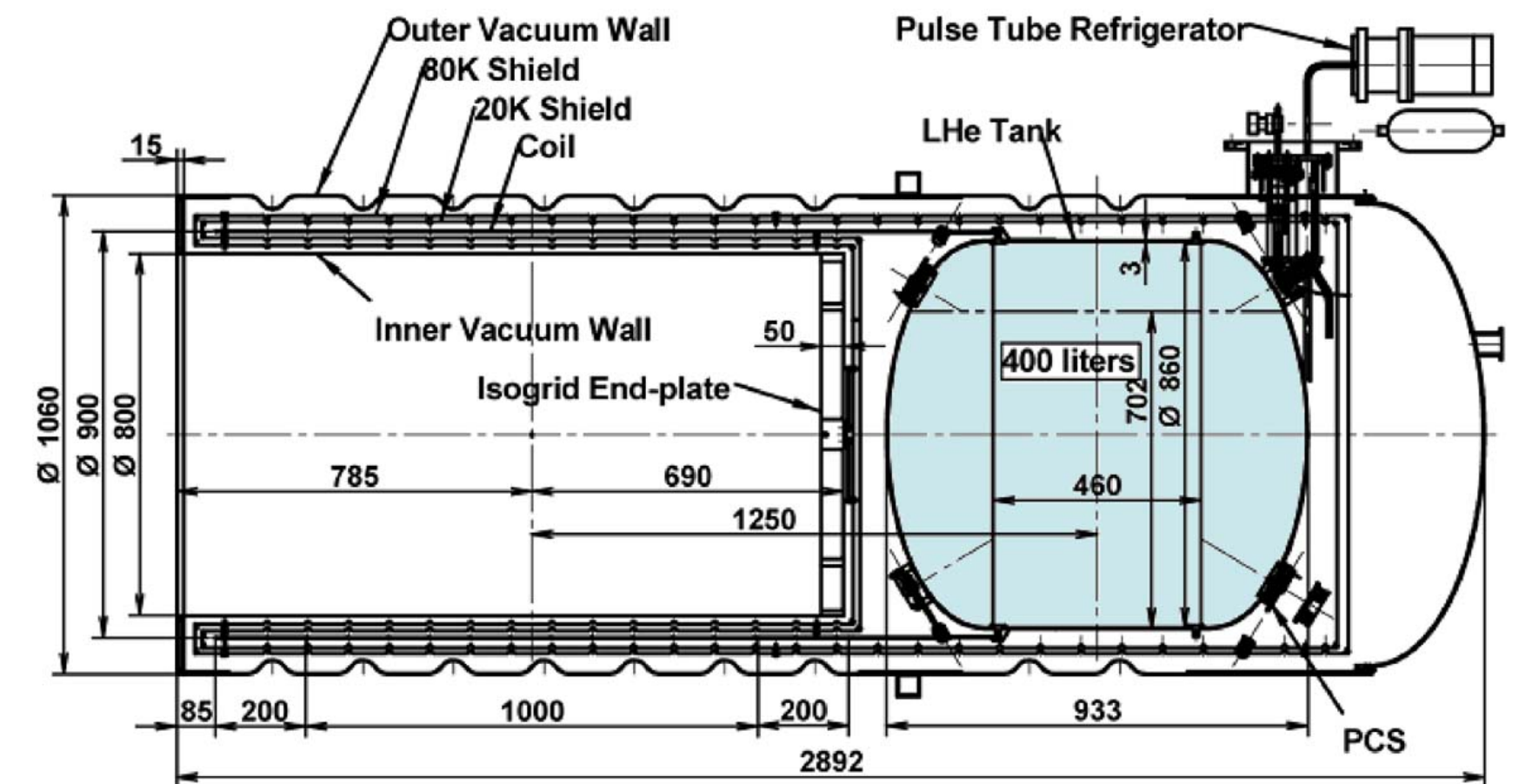
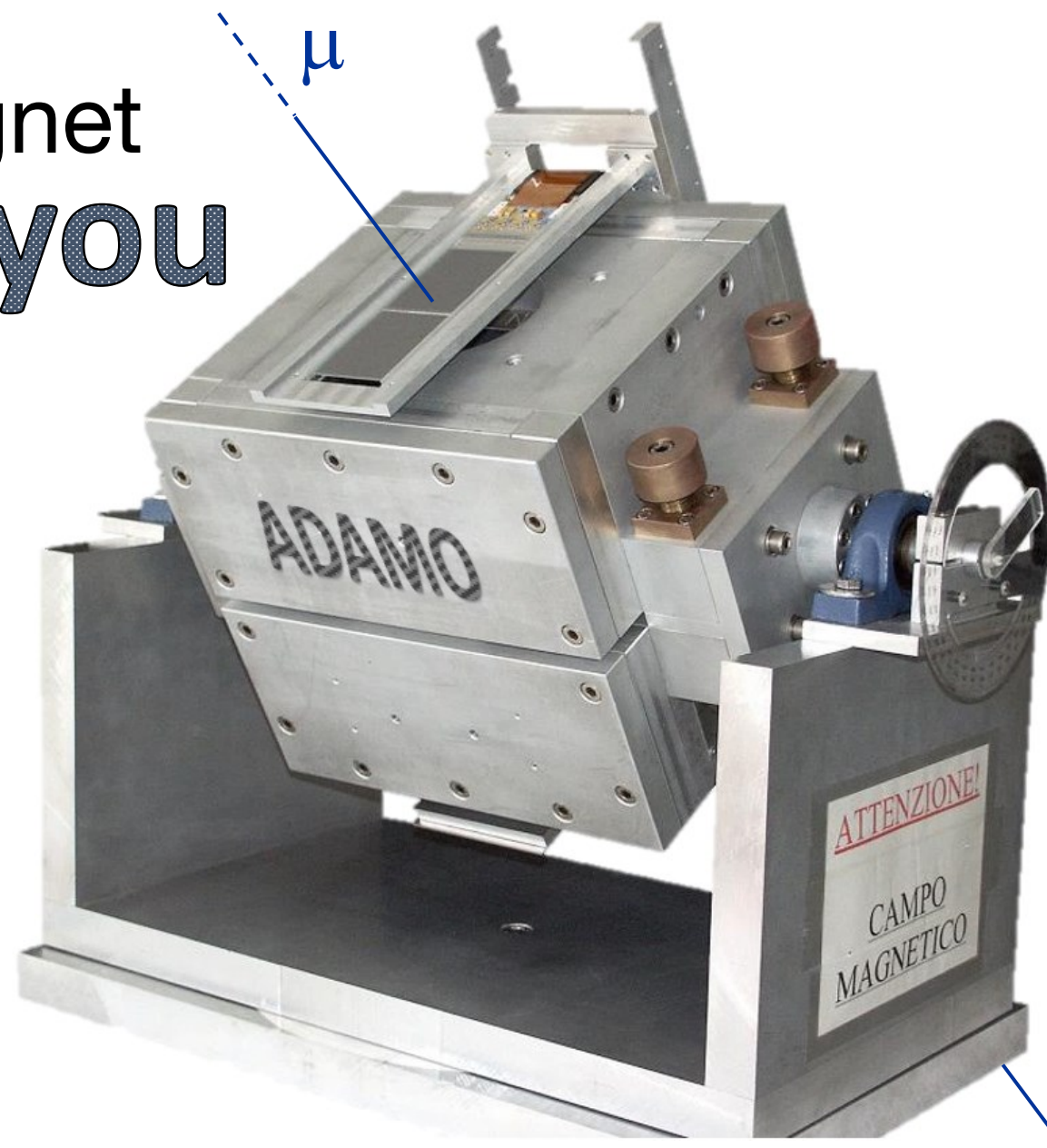
Sekiguchi-san's slide



Anatoli's slide

Muon measurement

- Good input from Honda-san
 - Muon measurement with $> 0.3 \text{ GeV}/c$ at a mountain will help to reduce uncertainty in low energy region.
- High energy muons for constraining Kaon contribution
- New possible experiment
 - Super ADAMO
 - Measurement with BESS magnet



Homework for Atm- ν model groups

- Complete the update of each group and compare the results.
- Make clear messages for accelerator experiment and muon measurement.
 - Possibility of p-N measurement at NA61
 - Energy data and phase space (p- θ or X_F - p_T)
 - Where LO

**Thank you
for all presenters and participants**

**See you in the 3rd workshop !!
Hopefully in-person at Nagoya**