

# FASER $\nu$ test beam

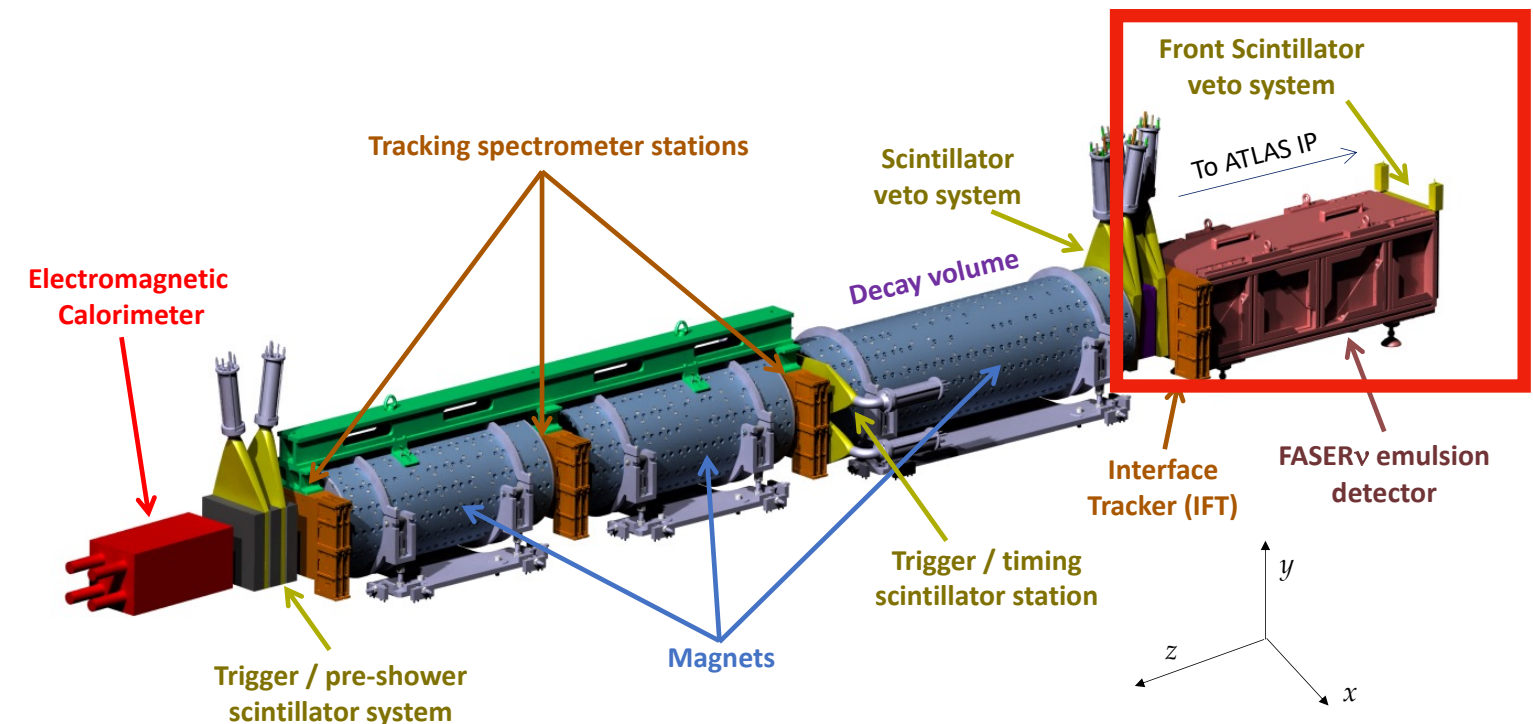
Ken Ohashi (Bern) on behalf of the FASER $\nu$  test beam team  
H8, Week 27 July 3rd - 10th

Ken Ohashi — 2024 June 27th

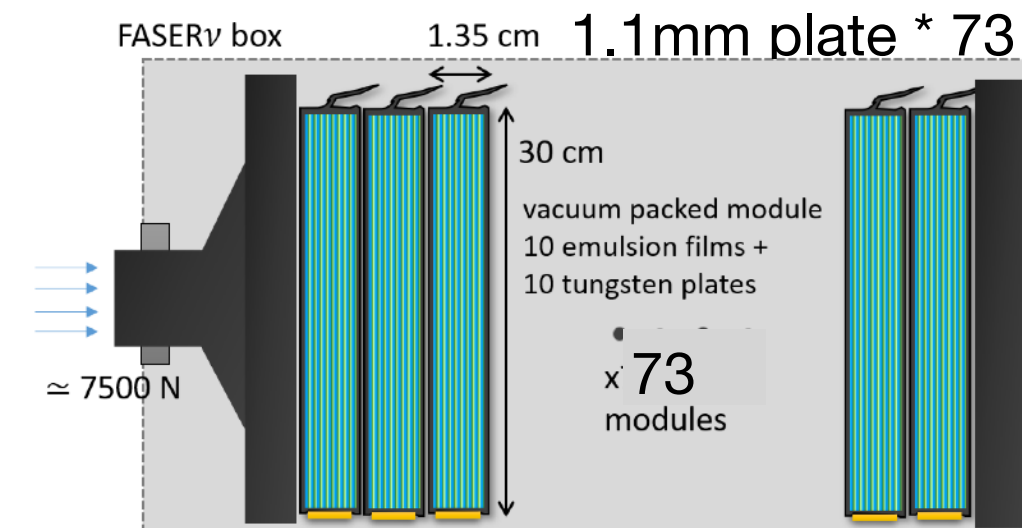
# FASER $\nu$ : a sub-detector of the FASER experiment



FASER $\nu$  detector



Emulsion films and tungsten plates



# Motivation and plans

- Motivation: Test performances of kinematical measurements in FASER $\nu$ 
  - Momentum estimation of muons and hadrons using the emulsion detector
    - We would like to have a test beam to estimate the accuracy of the estimation methods.
  - Irradiation of emulsion detectors
    - Muon beams, (-50 GeV), -100 GeV, -200 GeV, -300 GeV
    - -50, -100, -200, -300 GeV/c hadrons

# Beam request

- Low Rate Muons - Rate cannot be increased more but can be reduced.
  - -100 GeV/c, -200 GeV/c, -300 GeV/c muon beams, with 4cm x 4cm beam spot size, a few thousands particles per spills.
  - -50 muon beams, with 4cm x 4cm beam spot size, (lowest priority)
  - Wider beam is better, because we would like to expose wide area of our detector, 10 cm x 12.5 cm.
- Hadron beams
  - -50, -100, -200, -300 GeV/c hadrons, with 4cm x 4cm beam spot size, a few thousands particles per spills.
  - If possible, we would like to increase the purity of pi-.



# Set-up at H8 line



Detector

Scintillator



Table

Emulsion detector

Emulsion detector



# Backup