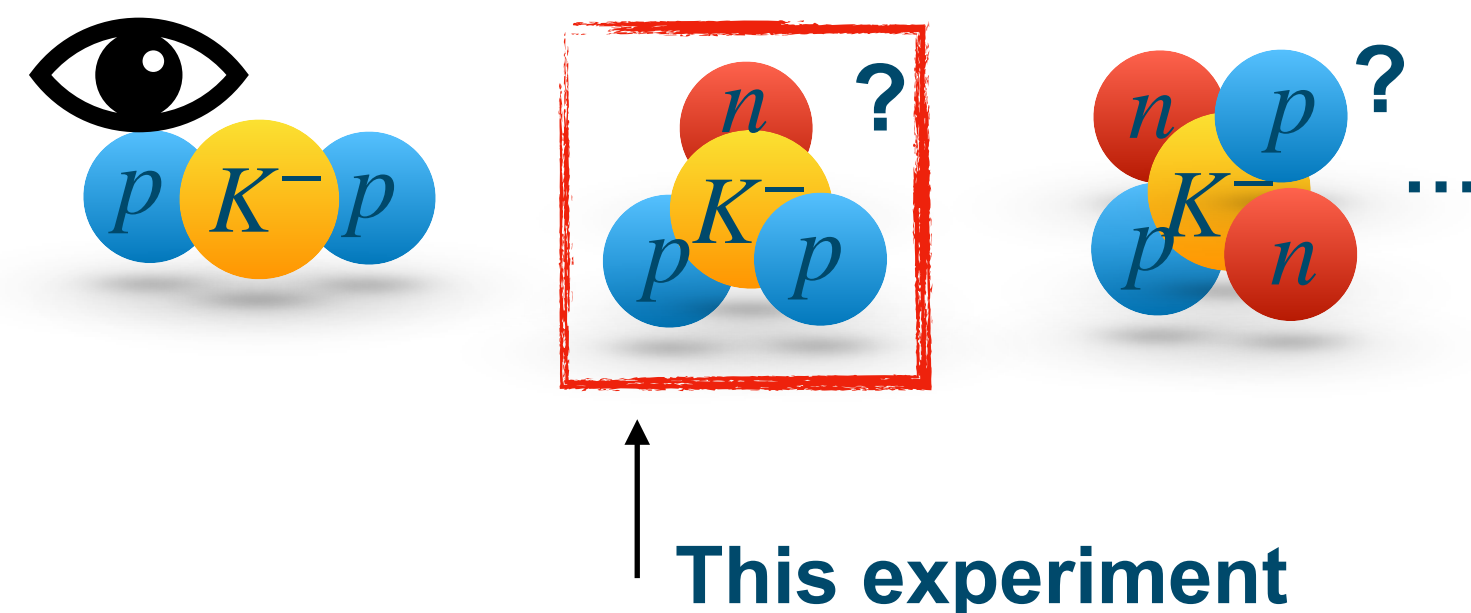


Detail Measurement of a new Kaonic Nuclei “ K^-ppn ”

Big Goal

Understand the Property of Kaonic nuclei
by **systematic research**



What is speciality in Kaonic nuclei?

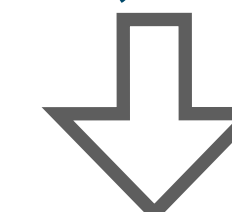
- **Much stronger attractive $\bar{K}N$ interaction** than the others ($NN, \Lambda N, \Sigma N$ etc...)
- **No Pauli exclusion principle**

J-PARC E15; confirmed “ K^-pp ”

- Very interesting result
- “B.E. ~ 50 MeV”

c.f.) pp ; unbound

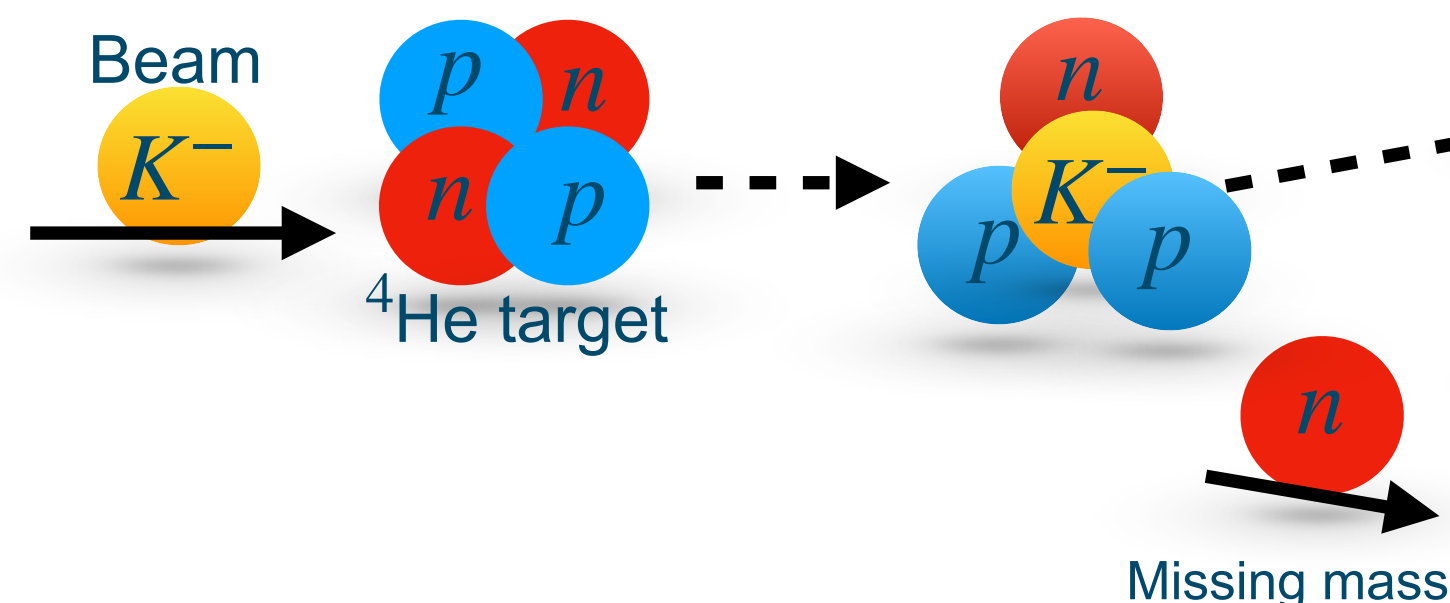
d ; B.E. ~ 2 MeV



This result suggests **High dense state** by adding \bar{K} into nucleon system.

J-PARC E80; Forcus on “ K^-ppn ”

Confirm a new Kaonic Nuclei “ K^-ppn ”

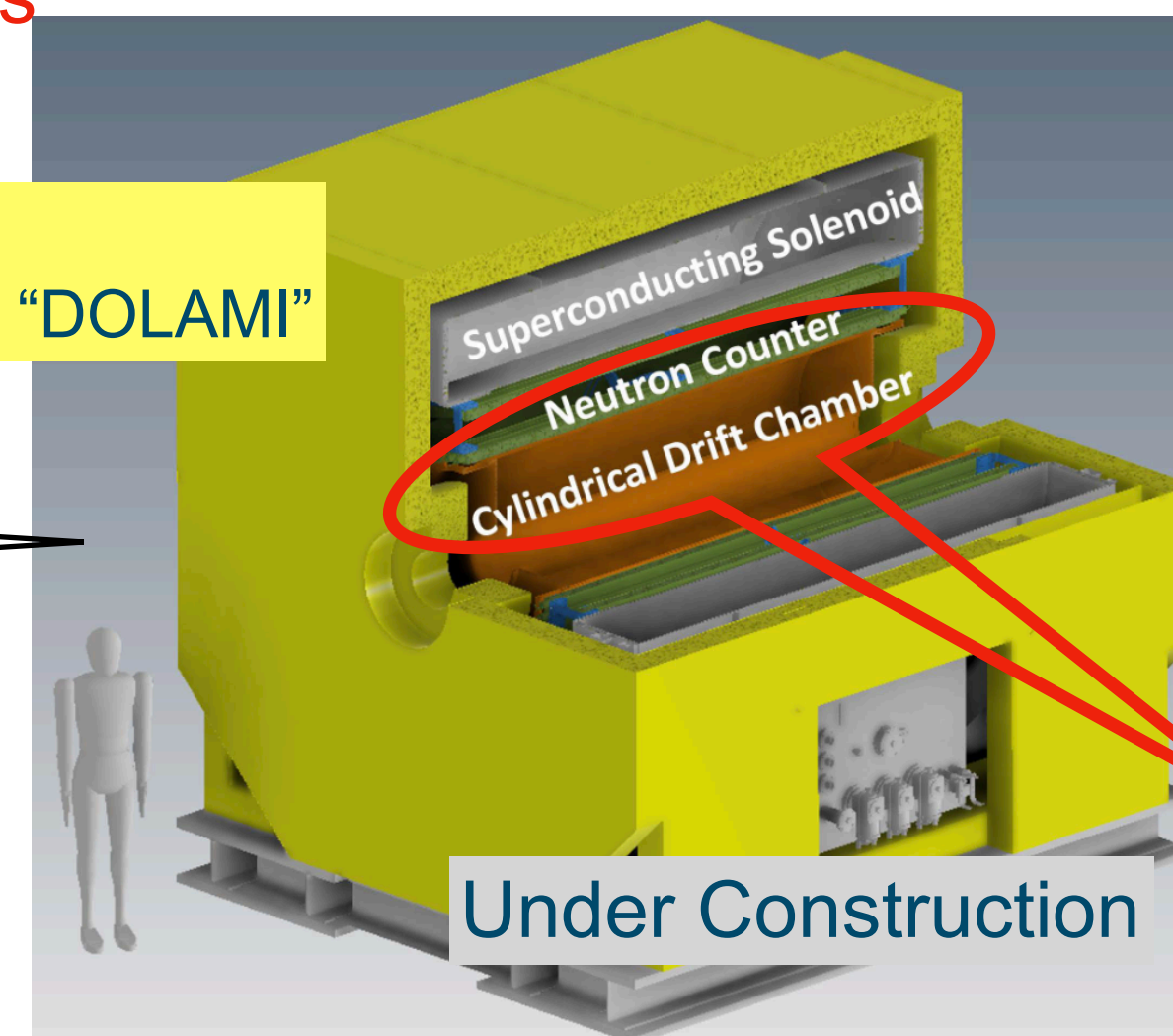


Comparing to E15;

- Increasing of decay particles
- Neutron included

New Detector System being developed

Detect by new Detector System “DOLAMI”



- **Larger acceptance**
- **Better capability to detect neutrons**

I contribute two detectors;

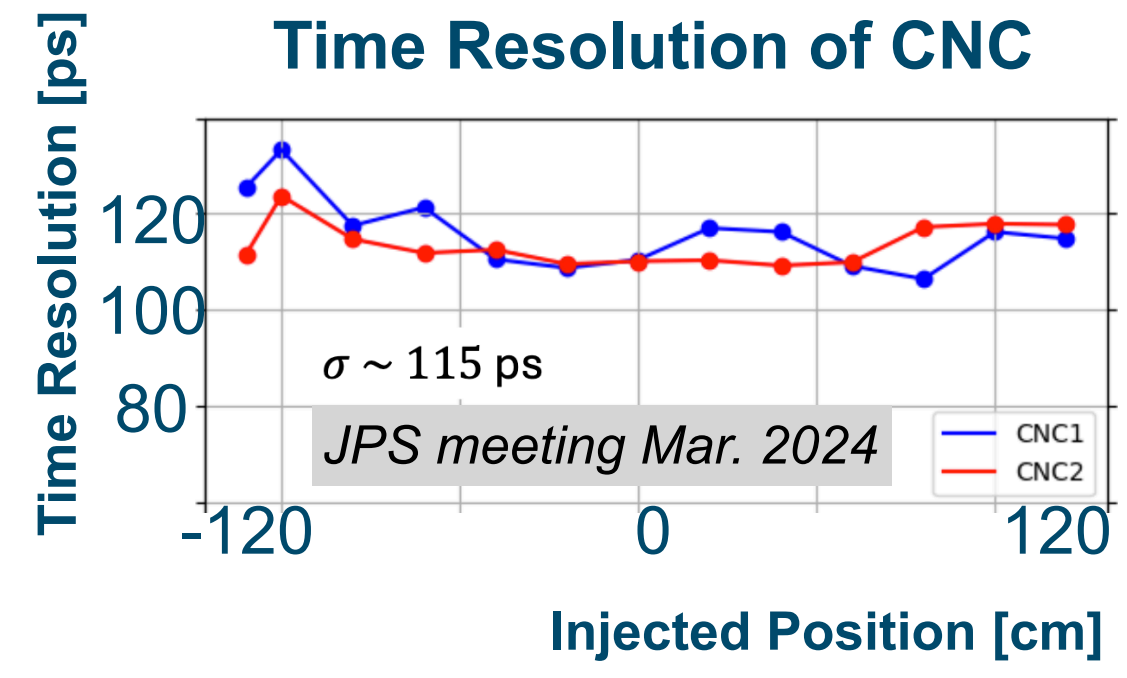
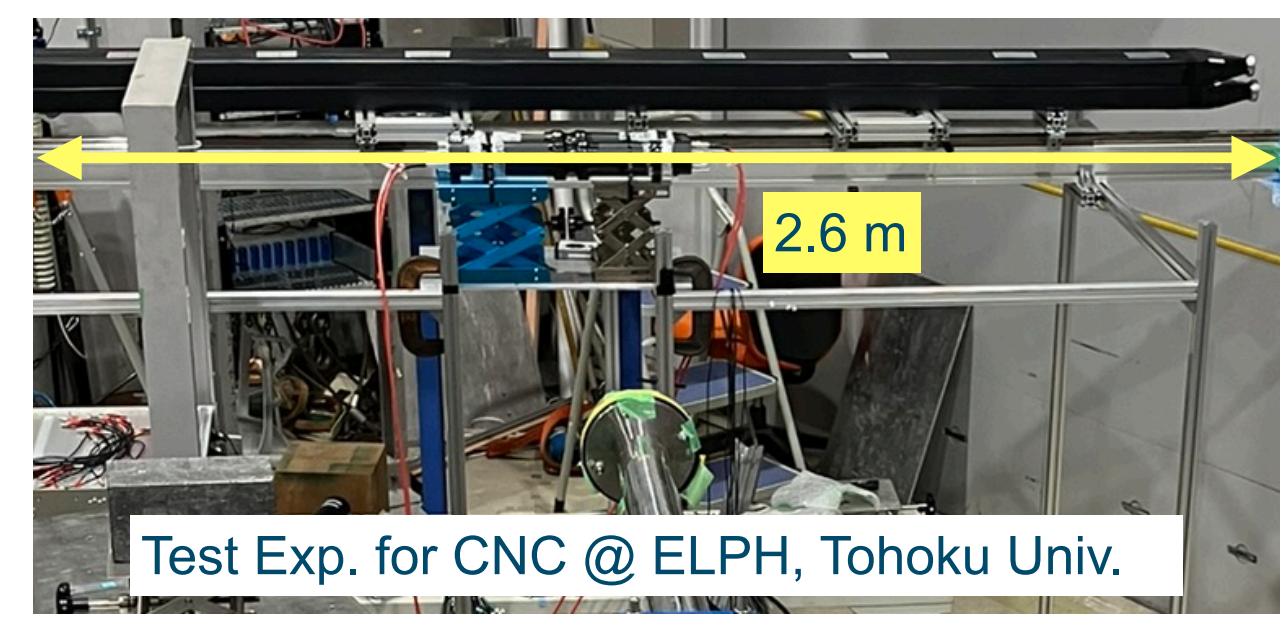
- **Cylindrical Neutron Counter**
- **Cylindrical Drift Chamber**

Under Construction

M1
2023
Done

Evaluated the time resolution of CNC

- From Frame, Jig to Analysis, Results Presentation



As a core member, led J-PARC E73 (the same member as E80)

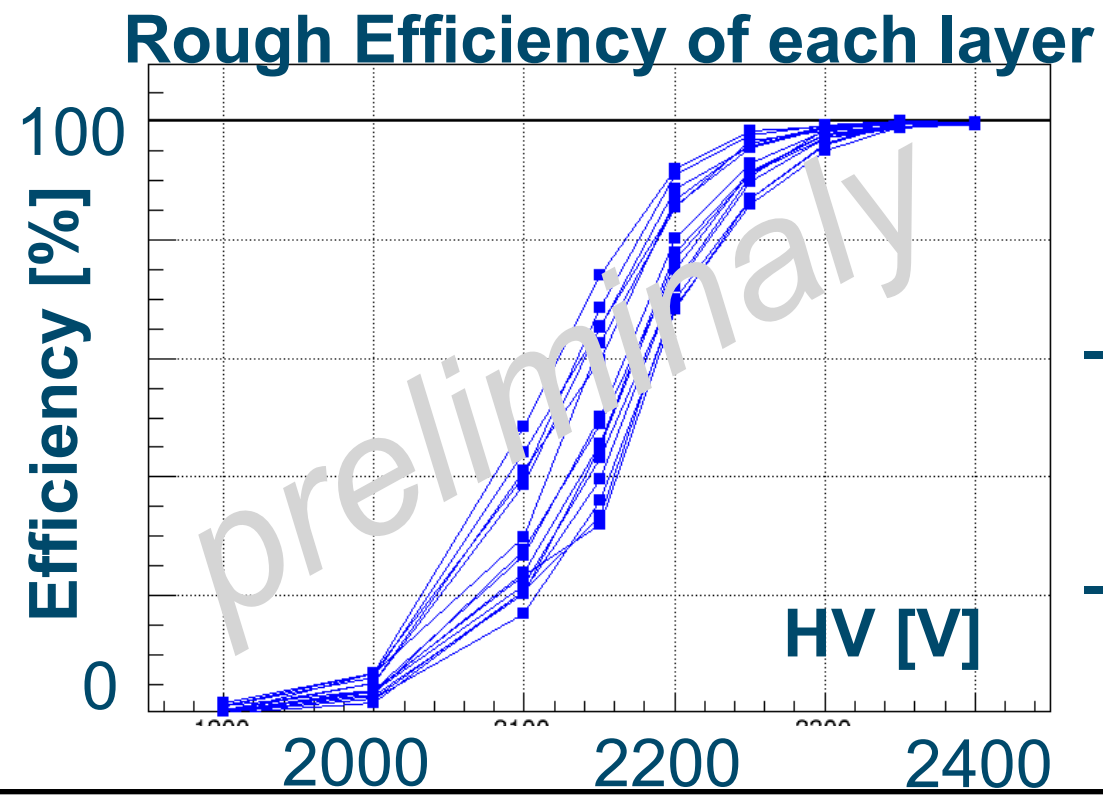
- Modified a Beam Line Chamber & Gas Line for wire chamber
- Beam Line Chamber installation & performance check
- Led some foreigners in beam time



M2
2024
now

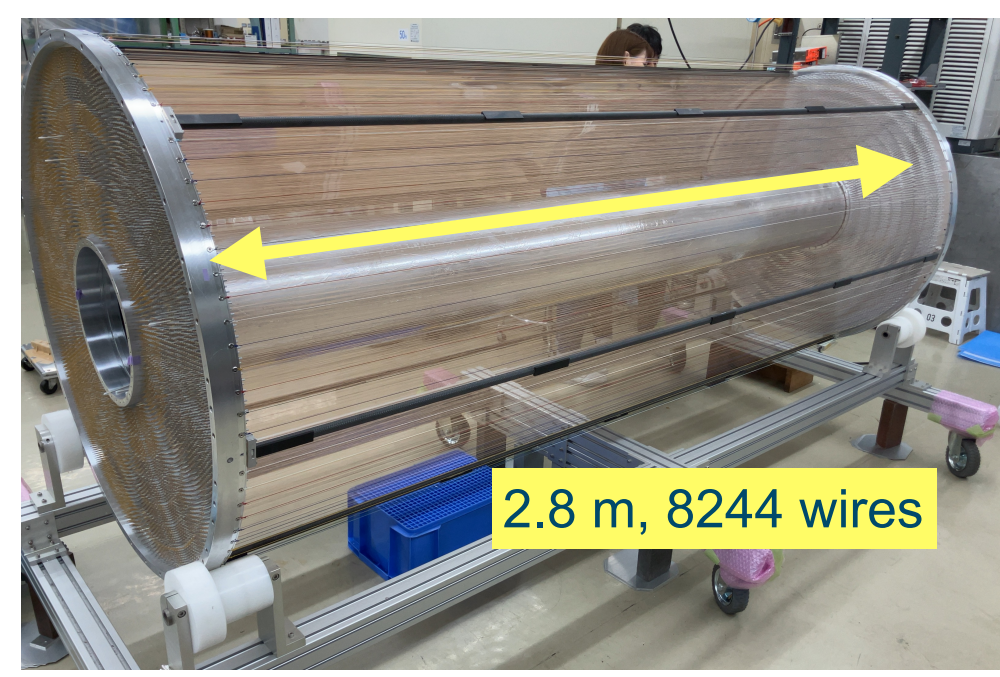
Study of Gas for CDC with old CDC(ArCO2)

JPS meeting Sep. 2024



Construct new CDC

- Daisy-chain cables to supply HV
- Cosmic ray test 1



D1
2025

CDC Commissioning

- Cosmic ray test 2

Finalize CNC

- Wrapping & Install read out

Oversea project

- DAΦNE

D2
2026

- Install DOLAMI, CNC and CDC
- Prepare for E80

Complete E80

D3
2027

Confirm a New Kaonic Nuclei "K⁻ppn"

Through the GP-PU, I want to;

- improve **English Communication skill** with foreign researchers
- get **leadership skills** to lead a international group