

The background of the slide features a soft-focus photograph of bamboo. On the left side, a thick, green bamboo stalk is visible, with several smaller branches extending from it. These branches are adorned with vibrant green leaves of varying shades, some appearing slightly blurred due to a shallow depth of field. The overall lighting is bright and natural, creating a serene and fresh atmosphere. The text is centered over this background.

**Polarization Experiments  
and  
High Resolution Option of  
DAIMAJIN Spectrometer**

**T. Uesaka (Tokyo)**

# **Pol. Experiments with DAIMAJIN**

---

- **Tensor force effects in high momentum region**  
 **$^3\text{He}(d,p)^4\text{He}$  scattering**
- **Three nucleon force effects in the p+d scattering**
- **$\Delta\Delta$ -dibaryon search via the  $^2\text{H}(d,d') \Delta\Delta$  reaction**

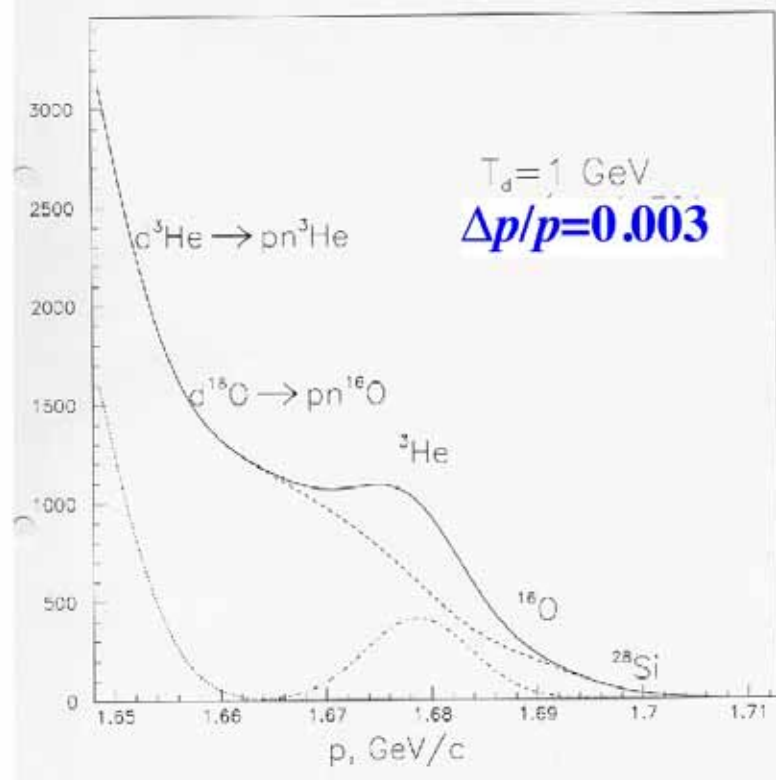
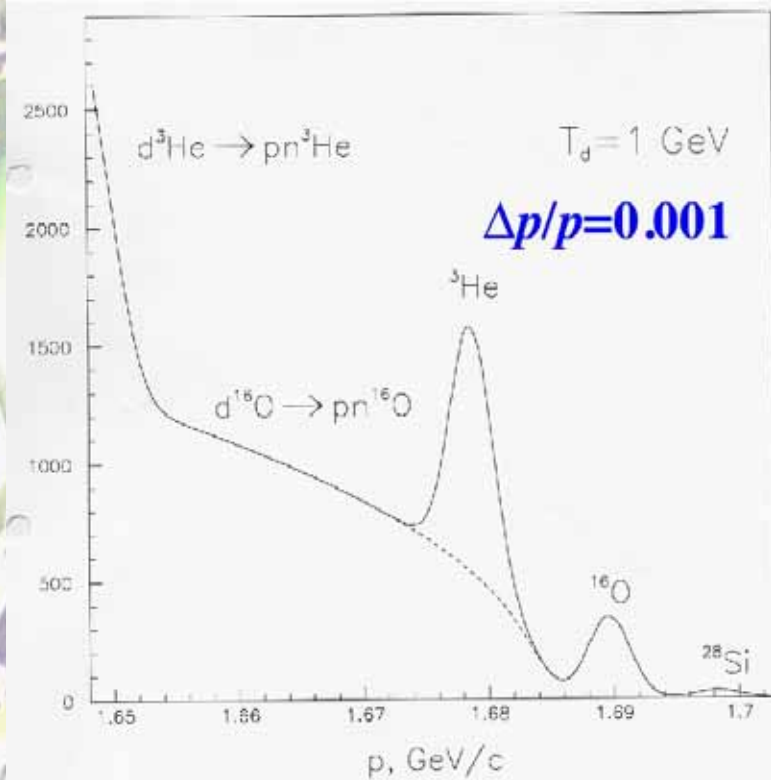
**Few nucleon system:**

**modest energy resolution of  $\sim 1\text{MeV}$   
to keep reasonable S/N ratio.**

**Large momentum byte**

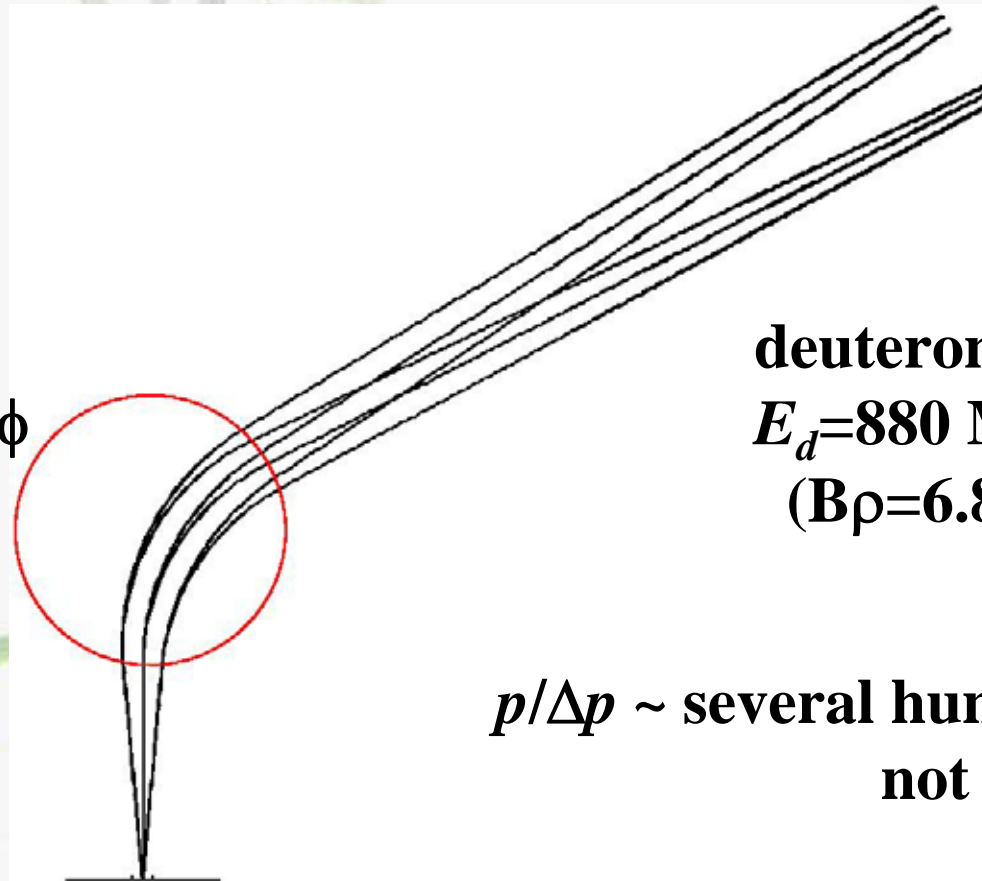
# Required Resolution

Background in  ${}^3\text{He}(d,p){}^4\text{He}$  measurement  
contribution from cell materials ( ${}^{16}\text{O}$ ,  ${}^{28}\text{Si}$  . . .)



# DAIMAJIN Spectrograph

3T, 2m $\phi$



deuteron  
 $E_d=880$  MeV  
( $B\rho=6.8$  Tm)

$p/\Delta p \sim$  several hundreds:  
not sufficient

# QQD Option

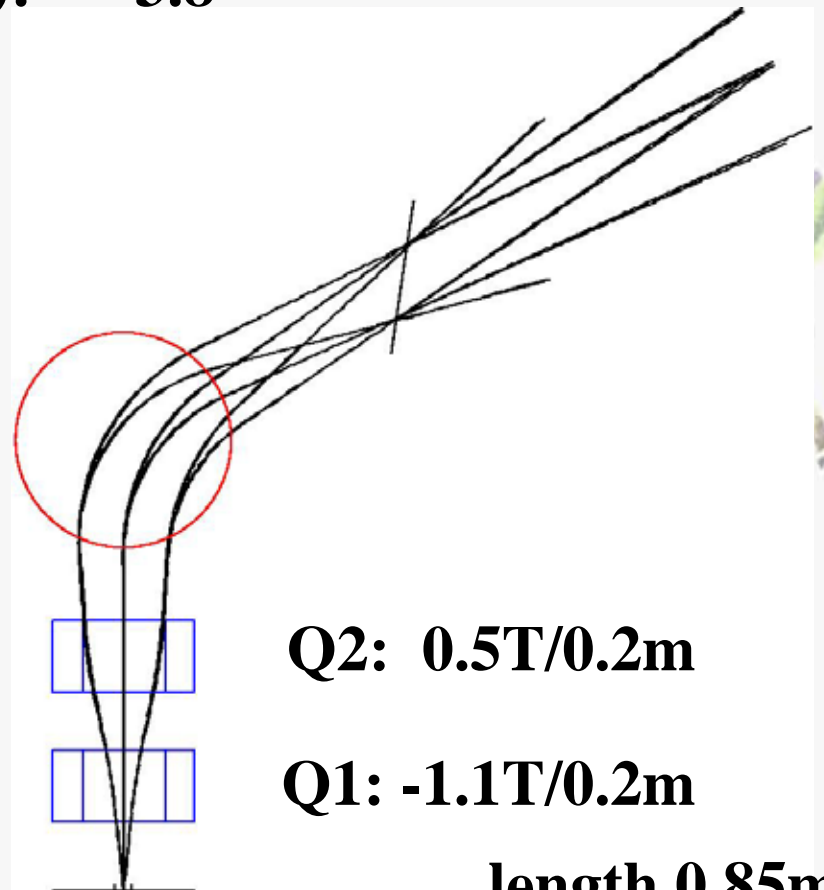
**Dispersion:** 3.4m  
**magnification(h):** 0.7  
**magnification(v):** 3.8

$p/\Delta p \sim 5000$   
(1st order)

60cm

**Dipole:**  
3T, 2m $\phi$

$\Delta\theta(h,v) = \pm 50\text{mrad}$   
 $\Delta\Omega = 10\text{msr}$



**Q2: 0.5T/0.2m**

**Q1: -1.1T/0.2m**

**length 0.85m**



# Summary

---

- **High resolution option of DAIMAJIN spectrograph is considered.**

**QQD**

- **With  $Q1=-1.1T/0.2m$ ,  $Q2=0.5T/0.2m$ , sufficient momentum resolution of  $p/\Delta p \sim 5000$  (1st order) can be achieved keeping  $\Delta\Omega = 10\text{msr}$ .**