

# HST15

## INTERNATIONAL SYMPOSIUM ON HIGH-RESOLUTION SPECTROSCOPY & TENSOR INTERACTIONS



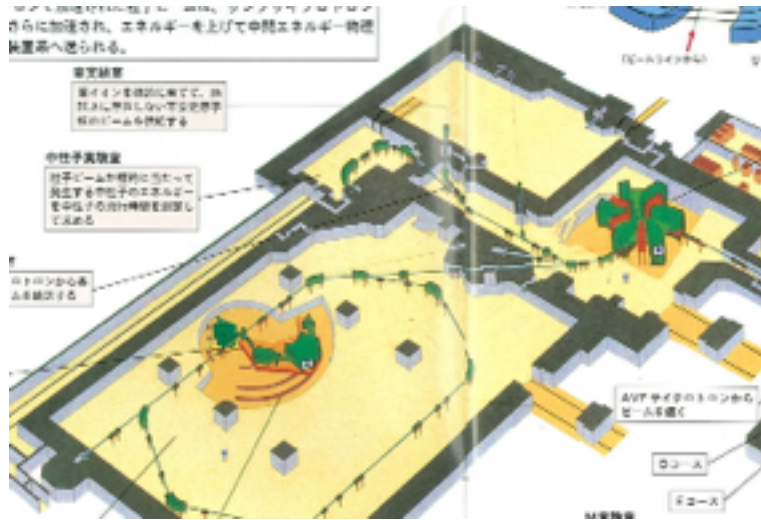
November 16-19, 2015  
at Nakanoshima Center, Osaka University

## High-Resolution Spectroscopy

WS (west south) beam-line has been built in 2000.

## Tensor Interactions

# High-Resolution Spectroscopy with the WS Beam-Line



WN



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G.P.A. Berg

T. Wasaka, T. Kawabata, K. Hatanaka, H. Fujita, and other collaborators

WS

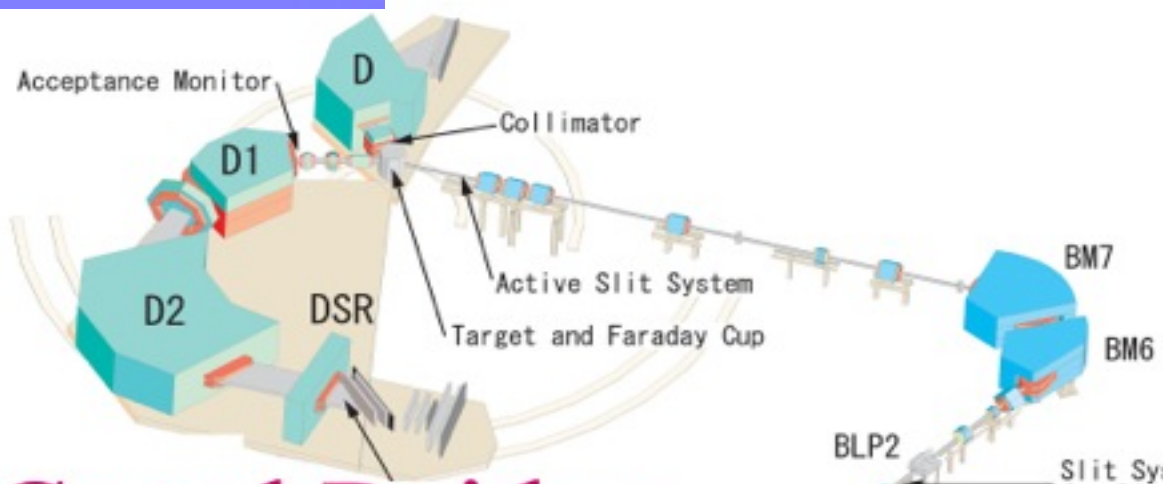


WS beam-line in 2000

Break-through of the high-resolution measurements at RCNP

$\Delta E=20-30$  keV

$(^3\text{He},t)$  at 420 MeV  
 $(p,p')$  at 300 MeV



**Grand Raiden**

**WS Beam Line**

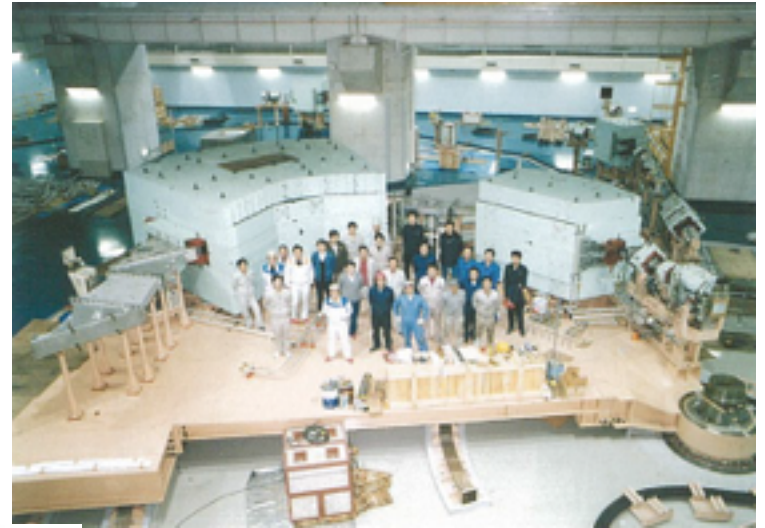
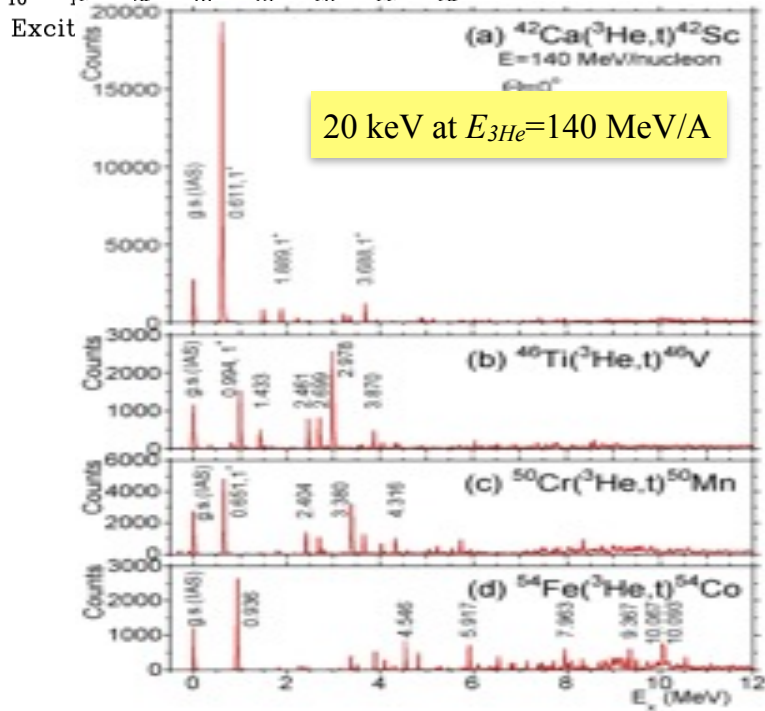
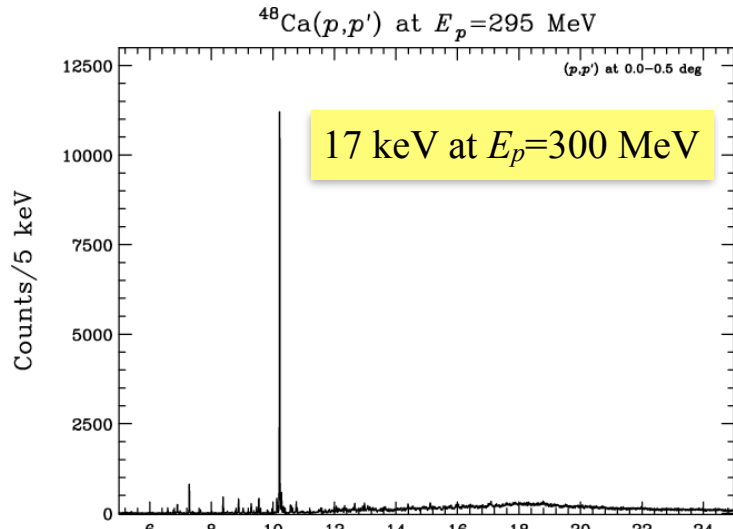
**Dispersion Matching Technique**

$\Delta E=80-120$  keV

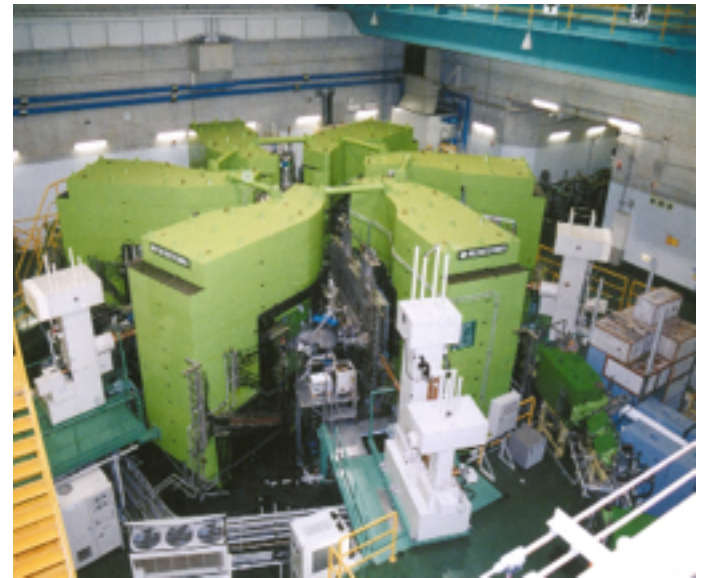
**Ring Cyclotron**



# High-Resolution Spectroscopy with the WS Beam-Line



Grand Raiden under construction 1991



RING Cyclotron 1991

## High-Resolution Spectroscopy

WS (west south) beam-line has been built in 2000.

Achievements and futures

## Tensor Interactions

Role of the Tensor Interaction in Nuclei

Appearance of the Effect in Nuclear Structure

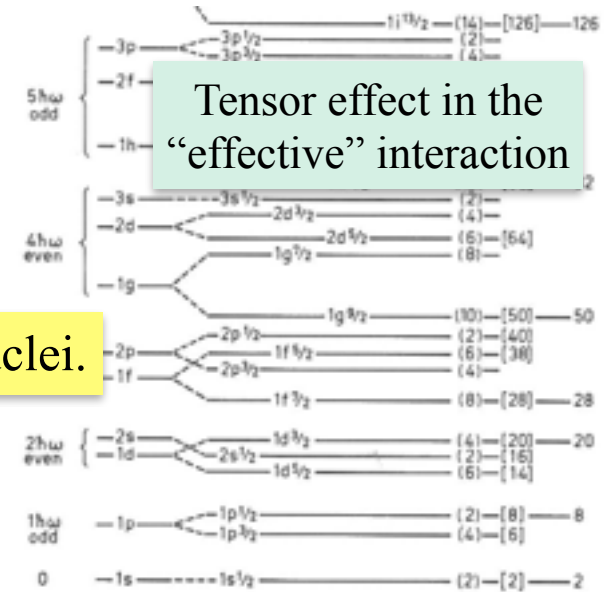
Fundamental Theoretical Descriptions

# Role of the Tensor Interactions in Nuclei and Appearance of the Effect in Nuclear Structure

A deuteron is bound by the tensor interaction.

Large binding energy of  ${}^4\text{He}$ .

The tensor interaction must important for describing nuclei.



High-momentum component of nucleons, correlated pairs.

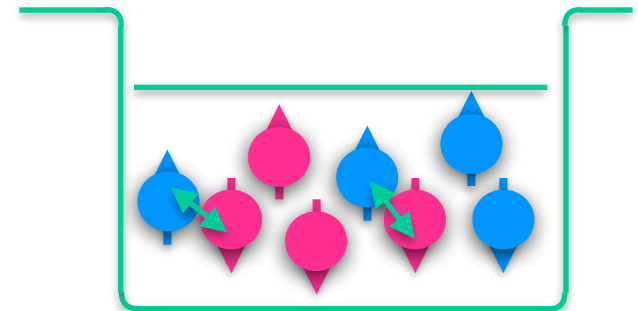
Modification of single particle energies

IS n-p pairing correlation, spin-aligned n-p pairs.

Alpha-clustering

... Appearance of the tensor interaction effects

Fundamental theoretical descriptions



tensor correlation

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## Discussions

Talks:

15+5 min.

17+8 min.

20+10 min.

We are trying to keep sufficient time for discussions.

Questions and discussions are highly welcome.

Let's start the scientific session  
and enjoy the discussions!