

PROPOSAL FOR EXPERIMENT AT RCNP

May 28, 2001

TITLE: Search for di- ^3He structure in ^6Be via ^6Li (^3He , t, ^3He) reaction**SPOKESPERSON:**

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EXPERIMENTAL GROUP:

Name	Institution	Title or Position
Hiroaki Utsunomiya	Dept. of Physics, Konan Univ.	Professor
Hidetoshi Akimune	Dept. of Physics, Konan Univ.	Lecturer
Kaoru Yamasaki	Dept. of Physics, Konan Univ.	D2
Ayako Shiokawa	Dept. of Physics, Konan Univ.	M2
Yasuharu Maki	Dept. of Physics, Konan Univ.	M1
Shintaro Nakayama	Dept. of Physics, Univ. of Tokushima	Professor
Ken-ichi Fushimi	Dept. of Physics, Univ. of Tokushima	Associate Professor
Masaru Yosoi	Dept. of Physics, Kyoto Univ.	Research Associate
Masayoshi Tanaka	Kobe Tokiwa College	Professor

RUNNING TIME:

Total machine time 6 days not including detector tuning

BEAM LINE: Ring: WS course**BEAM REQUIREMENTS:**

Type of particle	$^3\text{He}(2+)$
Beam energy	450 MeV
Beam intensity	10 nA
Other requirement	Energy stability over running time

BUDGET:

SSD housing 200,000yen

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SPOKESPERSON: Tamio Yamagata

SUMMARY OF THE PROPOSAL

The present work aims at the search for an excited states of a di- ^3He structure in ^6Be nucleus by observing a ^3He -particle decay from ^6Be nucleus excited via the ^6Li ($^3\text{He}, t$) reaction. In our previous E164-experiment, evidence for a di-triton structure was obtained in ^6He from observation of a triton decay. Based on the isobaric invariance we suppose that the state with the di- ^3He structure are present in ^6Be at around an excitation energy with the same mass excess in ^6He . To confirm this expectation, a coincidence experiment is proposed.