RCNP EXPERIMENT E172

PROPOSAL FOR EXPERIMENT AT RCNP

May 28, 2001

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

SPOKESPERSON:

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EXPERIMENTAL GROUP:

Name	Institution	Title or Position
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Hidetoshi Akimune	Dept. of Physics, Konan Univ.	Lecturer
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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}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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SUMMARY OF THE PROPOSAL

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