

E445

PROPOSAL FOR EXPERIMENT AT RCNP

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TITLE:

Direct reactions with MAIKo

SPOKESPERSON:

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EXPERIMENTAL GROUP:

Full Name	Institution	Title or Position
N. Aoi	RCNP, Osaka University	Professor
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H. Sakaguchi	RCNP, Osaka University	Guest researcher
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J. Tanaka	RCNP, Osaka University	D2
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S. Adachi	Department of Physics, Kyoto University	D3
T. Furuno	Department of Physics, Kyoto University	D1
M. Tsumura	Department of Physics, Kyoto University	D1
Y. Ishii	Department of Physics, Kyoto University	M2
M. Murata	Department of Physics, Kyoto University	M2
T. Hashimoto	Institute for Basic Science	Assistant professor
H. Alvarez-Pol	GENP, USC	Researcher
P. Konczykowski	GENP, USC	Researcher
J. Lee	The University of Hong Kong	Assistant professor
F. Cappuzzello	INFN-LNS and Dpt. Phys. Catania University	Professor
M. Cavallaro	INFN-LNS	Reasearcher
C. Agodi	INFN-LNS	Reasearcher

RUNNING TIME: Detector calibration 1 day
Data runs 6.0 days

BEAM LINE: EN course

BEAM REQUIREMENTS: Type of particle ^{13}C
Beam energy 50A MeV
Beam intensity ≥ 400 nA

BUDGET: CD_4 and enriched CO_2 gases 660.000 yen

SAFETY CONTROLLED ITEMS:

- Active target filled with isobutane, deuterium and CO_2 (enriched oxygen) gases.

TITLE:**Direct reactions with MAIKo****SPOKESPERSON:** Y. Ayyad (RCNP) and I. Tanihata (RCNP)**SUMMARY OF THE PROPOSAL**

MAIKo active target has been developed for performing experiments in inverse kinematics at RCNP. In particular, direct and resonant reactions with exotic nuclei far from stability, that will allow us to investigate the shell structure of exotic nuclei near the drip-lines, are most suitable in the RCNP secondary beam energy range. By using a thick active target we can efficiently explore the region of the nuclear landscape where very low production rates are expected with the present techniques. In addition, the reaction products with the lowest energies can be detected with a negligible excitation energy degradation. Our plan is to commission and characterize the active target (and ancillary detectors) with both, stable and unstable beams using different reactions and different gas targets.