

PROPOSAL FOR EXPERIMENT AT RCNP

27 January 2003

TITLE:

Measurement of $^{208}\text{Pb}(\bar{p}, 2p)^{207}\text{Tl}$ reaction
for examining a reliability of relativistic calculations

SPOKESPERSON:

Full Name NORO, Tetsuo
Institution Department of Physics, Kyushu University
Title or Position P
Address 6-10-1 Hakozaki, Higashi, Fukuoka, 812-8581
Phone number +81-92-642-2544
FAX number +81-92-642-2553
E-mail noro@nucl.phys.kyushu-u.ac.jp

Full Name ISHIDA, Takashi
Institution Department of Physics, Kyushu University
Title or Position D1
Address 6-10-1 Hakozaki, Higashi, Fukuoka, 812-8581
Phone number +81-92-642-2707
FAX number +81-92-642-2710
E-mail ishida@kutl.kyushu-u.ac.jp

EXPERIMENTAL GROUP:

Noro, T.	Kyushu U	(P)	Asaji, S.	Kyushu U	(M1)
Yonemura, T.	Kyushu U	(M1)	Sagara, K.	Kyushu U	(P)
Kudoh, T.	Kyushu U	(M1)	Shiota, M.	Kyushu U	(M1)
Shimomoto, S.	Kyushu U	(M1)	Hillhouse, G. C.	Stellenbosch U	(SL)
Yoshida, H. P.	RCNP	(JSPS)	Hatanaka, K.	RCNP	(P)
Sakemi, Y.	RCNP	(AP)	Wakasa, T.	RCNP	(RA)
Kamiya, J.	RCNP	(D3)	Shimizu, Y.	RCNP	(D1)
Fujita, K.	RCNP	(M2)	Tameshige,	RCNP	(M1)
Sakaguchi, H.	Kyoto U	(AP)	Takeda, H.	Kyoto U	(JSPS)
Uchida, M	Kyoto U	(D3)	Yasuda, Y.	Kyoto U	(D2)
Terashima, S.	Kyoto U	(M2)	Kishi, S	Kyoto U	(M1)

RUNNING TIME: Installation time without beam 2 day(for each beam time)
Development of device 2 days
Data runs for cross section and A_y 6 days
Data runs for D_{NN} 7 days

BEAM LINE:

Ring Cyclotron: WS course

BEAM REQUIREMENTS: Type of particle polarized p
Beam energy 392 MeV
Beam intensity ≥ 100 nA

Any other requirements energy resolution
 ≤ 200 keV

more than 70% polarization

BUDGET: Experimental expenses 3.5M yen

TITLE:

Measurement of $^{208}\text{Pb}(\vec{p}, 2p)^{207}\text{Tl}$ reaction
for examining a reliability of relativistic calculations

SPOKESPERSON: NORO, Tetsuo and ISHIDA, Takashi

SUMMARY OF THE PROPOSAL

Measurements of cross section, analyzing power and polarization transfer coefficient for forward emitted protons in $^{208}\text{Pb}(\vec{p}, 2p)^{207}\text{Tl}$ reaction at an incident beam energy of 392 MeV are proposed. Recently cross section and analyzing power of $^{208}\text{Pb}(\vec{p}, 2p)^{207}\text{Tl}$ reaction at $T_{\vec{p}}=202$ MeV have been measured and compared with a relativistic calculation but significant ambiguities are included in both of the data and reaction mechanism. The purpose of this measurement is finding it out if the cross section, analyzing power A_y , polarization P and spin transfer coefficient D_{NN} are well reproduced by the relativistic calculations, which is recently succeeded by Hillhouse.