### E64 ( $\pi$ I) T.Tsuru Studies of $2\pi$ , $3\pi$ States in $\pi$ p Charge Exchange Reaction

# E121 (πΙ II) T.Inagaki Study of a Few Pion States in $\pi$ p Charge Exchange Reaction

### E64

Submitted	1978.5.25
Approved	1979.6.1
Beam line	$\pi$ 1
Shift requested	150
Shift executed	165.7
Executed cycles	81[11,12,13], 82[3,4,6,7,8,9,10,11,12,13,14,15,16], 83[1,2,3,6,7,8,9]

### E121

Submitted	1983.3.31
Approved	1983.4.20
Beam line	$\pi 1$
Shift requested	120
Shift executed	62.4
Executed cycles	83[10,11,12,13], 84[2,3]

## Papers and activities

[I]	Legend]

Physics papers published in refereed journal

 $\bigcirc$ Technical papers

PhD theses

Conference and Symposium

Internal Report and others

A.Ando et al.

Evidence for Two Pseudoscalar Resonances of the  $\eta \pi^+ \pi^-$  System in the D(1285) and E/t Regions Phys. Rev. Lett. 57 (1986) 1296.

A.Ando et al.

Axial Vector Resonances  $a_1$  and  $h_1$  of  $\pi^+\pi^-\pi^0$  Systems in  $\pi^-p$  Charge Exchange Reaction at 8.06 GeV/c

Phys. Lett. B291 (1992) 496.

T.Inagaki and R.Takashima

New Types of Plastic Scintillators

Nucl.Instr.Meth. 201(1982) 511.

T.Inagaki et al.

Large Aperture Superconducting Magnet (BENKEI)

Teionkogaku 18 (1983) 296 (in Japanese).

O M.Ikeno et al.

Data Acquisition System with Encoder and Buffer Memory Modules Nucl. Instr. Meth. 225 (1984) 347.

O T.Inagaki et al.

Large Aparture Superconducting Magnet (BENKEI) Cryogenics Feb. (1984) 83.

- Physics papers published in refereed journal.
- Technical papers.
- ★ PhD theses.
- ♦ Conference and Symposium.
- \* Internal Report and others.

M.Kobayashi et al.

An *NaI(Tl)*-<sup>241</sup>*Am* High Reliability, Constant Amplitude Light Pulser Nucl. Instr. Meth. 224 (1984) 318.

★ J.Shirai

Measurement of the Differential Cross Sections of  $\eta$  and  $\eta'$  Produced in  $\pi$  p Charge Exchange Reactions at 8.06 GeV/c.

Kyoto University, 1985

★ K.Ohmi

Experimental Study of  $\pi^- p \rightarrow \pi^+ \pi^- \pi^0 \eta n$  and  $\pi^+ \pi^- \eta n$  Process at 8.06 GeV/c. Tsukuba University, 1985

★ R. Takashima

Experimental Study on the Reaction  $\pi^- p \rightarrow K^{\pm} K^0_s \pi^{\pm} \eta n$  at 8.06 GeV/c.

Kyoto University, 1986

A. Ando et al.

High Statistics Study of  $\pi^- p \rightarrow \pi^+ \pi^- \pi^0 n$  and  $\pi^+ \pi^- \eta n$  Reactions at 8.06GeV/c.

XXII International Conference on High Energy Physics, Leipzing, July, 1984.

T. Tsuru

Recent Status of Meson Spectroscopy - exotic states -.

Proceeding of the Meeting on Hadron Spectroscopy, KEK Feb. 5-6, 1985., KEK Report 85-14, p1.

T. Inagaki and K.Ohmi

Meson Spectroscopy Experiment in Charge Exchange Process.

Proc. of the Meeting on Hadron Spectroscopy, KEK Feb. 5-6, 1985., KEK Report 85-14, p1.

T. Tsuru

Meson Spectroscopy Experiment at KEK - Et Puzzle -.

Proc. of the International Workshop on Nucl. Phys. in GeV Region, KEK, Nov. 13-15, 1984., KEK Report 84-20, p101.

♦ K. Ohmi

Experimental Review of Meson Spectroscopy.

Proc. of the Meeting on Few-Body Problems, KEK, Oct. 3-5,1985., KEK Report 85-13, p1.

T. Inagaki

Meson Spectroscopy Experiment in Charge Exchange Process.

Proc. of the Meeting on Few-Body Problems, KEK, Oct. 3-5,1985., KEK Report 85-13, p24.

♦ A. Ando et al.

Evidence for a New Pseudoscalar Resonance in  $\eta \pi^+ \pi^-$  System in the E/t Region Produced by  $\pi^- p$  Charge Exchange Reaction.

International Europhysics Conference on High Energy Physics, Bari, Italy, July 18-24, 1985.

♦ A. Ando et al.

Evidence for a New Pseudoscalar Resonance in  $\eta \pi^+ \pi^-$  System in the E/t Region Produced by  $\pi^- p$  Charge Exchange Reaction.

1985 Internatinal Symposium on Lepton and Photon Interactions at High Energies, Kyoto, Aug. 19-24, 1985, KEK Preprint 85-15, June 1985.

S. Fukui et al.

Study of the  $\eta\pi^+\pi^-$  System in E/ $\iota$  Region Produced by  $\pi^-p$  Charge Exchange Reaction at 8.95 GeV/c.

Proc. of the Second International Conference on Hadron Spectroscopy, April 16-18, 1987, KEK, Tsukuba, KEK 87-7 (1987) 477.

♦ A. Ando et al.

Study of the  $\pi + \pi^{-}\pi^{0}$  system in  $\pi^{-}p$  Charge Exchange Reaction at 8.06 GeV/c.

Proc. of the Second International Conference on Hadron Spectroscopy, April 16-18, 1987, KEK, Tsukuba, KEK Preprint 87-56 (1987) 479.

A. Ando et al.

Experimental study on  $\pi^- p \to K^{\pm} K_s \pi^+_n$  at 8.06 GeV/c.

XXIV International Conference on High Energy Physics, August 4-10, 1988 Mnich

Physics papers published in refereed journal.

Technical papers.

<sup>★</sup> PhD theses.

Conference and Symposium.

<sup>\*</sup> Internal Report and others.

#### ♦ K. Takamatsu

Experimental studies on Meson Spectroscopy at KEK

Proc. 2nd Int. Conf. Hadron Spectroscopy, Hadron 89, Sep. 23-27, 1989, Ajaccio, Edition Frontieres (1990) 71 and KEK 89-154, 1989.

T. Inagaki

A Series of Experiments at KEK for Light Quark Meson Spectroscopy, E64/121/135

Proc. of BNL Workshop on Glueballs, Hybrids and Exotic Hadrons, AIP Conf. Proc. 185(1988)35

Axial Vector Resonances at and  $h_1$  of  $\pi^+\pi^-\pi^0$  Systems in  $\pi^-p$  Charge Exchange Reaction at 8.06 GeV/c

Nucl. Phys. B21(Proc. Suppl.)(1991) 98.

 $a_1$  and  $h_1$  in the  $\pi$  p Charge Exchange Reaction

Proc. 3rd Workshop on Light Quark Meson Spectroscopy, Feb 28-29, 1992, KEK

KEK Proceedings 92-8 (1992)14.

♦ A.Ando et al. (presented by T.Tsuru)

Mass and Width of  $a_1(1260)$  in  $\pi$  p Charge Exchange Reaction

Proc. Int. Conf. on Hadron Spectroscopy, Hadron91, Aug. 12-16 (1991), College Park, World Scientific (1992) 455.

\* A.Ando et al.

Electron Beam Test of the Active Converter Device. KEK-79-21, 1979.

\* T.Tsuru et al.

New Online Program with Encoder and Memory Buffer Modules (in Japanese).

KEK Report 84-4, May 1984.

\* A. Ando et al.

High Statistics Study of  $\pi^- p \rightarrow \pi^+ \pi^- \pi^0 n$  and  $\pi^+ \pi^- \eta n$  Reactions at 8.06 GeV/c

High Energy Conf. Leipzing, DDR, 19-27 July, KEK Preprint 84-7

\* A. Ando et al.

Evidence for a New Pseudoscalar Resonance of  $\eta \pi^+ \pi^-$  System in the E/ $\iota$  Region Produced by  $\pi$ -p Charge Exchange Reaction

KEK-Internal 85-15, 1986

\* T.Tsuru

Glueball Tansaku to E/t Puzzle

Butsuri Gakkaishi 41-9 (1986)

\* T.Tsuru

Short Review of Light Quark Spectroscopy

Proc. of the Symposium on Hadron Spectroscopy, KEK, Jan.8-9,1987

\* T. Tsuru and K. Takamatsu

Proc. of the Second International Conference on Hadron Spectroscopy, April 16-18, 1987

\* J.Iizuka

Light Meson Spectroscopy ni kansuru shomondai

Proc. Meeting for Studies on Meson Spectroscopy in 1-2 GeV Region, KEK, Aug.8-10,1989, KEK Report 90-6 (1989) 11.

\* T.Nakaura

 $\pi\pi$  Analysis IV-S(750) Resonance ni tsuite

Proc. Meeting for Studies on Meson Spectroscopy in 1-2 GeV Region, KEK, Aug.8-10, 1989, KEK Report 90-6 (1989) 19.

\* K.Takamatsu

1.2-1.5 GeV/c<sup>2</sup> Ryouiki no Pseudscalar, Axialvector Tyukanshi-e<sup>+</sup>e<sup>-</sup>, γγ, Hadron hannou

Proc. Meeting for Studies on Meson Spectroscopy in 1-2 GeV Region, KEK, Aug. 8-10, 1989, KEK Report 90-6 (1989) 48.

\* K. Takamatsu

Meson Spectroscopy no Kenkyu-Exotic Joutai no Tansaku

Physics papers published in refereed journal.

Technical papers.

<sup>★</sup> PhD theses.

<sup>♦</sup> Conference and Symposium.

<sup>\*</sup> Internal Report and others.

Gakujutsu Geppou 34-4 (1990) 349.

Physics papers published in refereed journal.
Technical papers.
★ PhD theses.
Conference and Symposium.
\* Internal Report and others.