For experiments to get heavier $S=-2$ nuclei.

= from BNL - E964 =

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Dec. 11. 2001.
JHF workshop @ KEK.

= Motivation =

To make a chart of $S=-2$ nuclei.

..... $\lesssim nN$ in the case of Ξ^- captur at rest.

Systematic Study of Double Strangeness System by an Emulsion-Counter Hybrid Method

AGS-E964

Phys. Dept., Gifu Univ.
K. Nakazawa
Oct.20.2001

1. Status of the **PS-E373 (KEK)** experiment.
2. Goal of the **AGS-E964** experiment.
3. Setup of the **AGS-E964** experiment.
4. Summary.

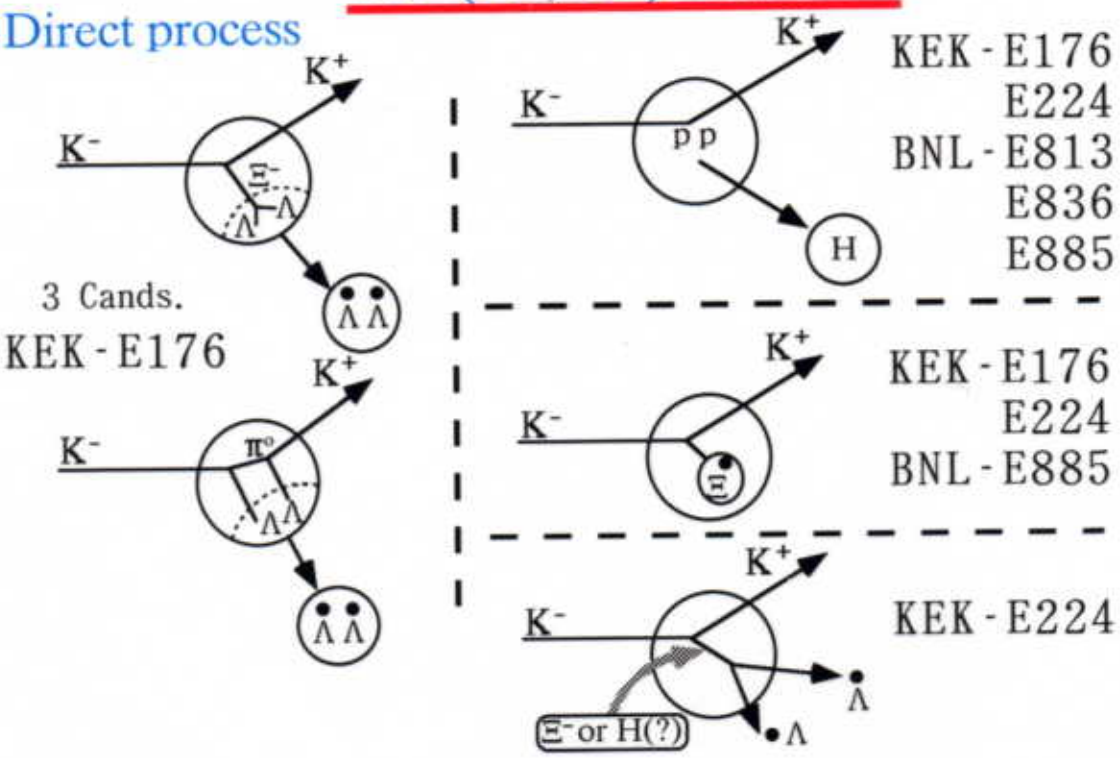
AGS-E964 collaborators (until now)

BNL,	***USA***	R. E. Chrien, H. Hotchi, M. May, P. Pile, A. Rusek
CIAE,	***China***	H. Guo, Z. Liu, S. Lu, J. Zhou, graduate students
CMU,	***USA***	G. B. Franklin, graduate students
Gifu,	***JPN***	K. Nakazawa, K. Ohashi, graduate students
Kyoto,	***JPN***	H. Funahashi, K. Imai, M. Nakamura, graduate students
New MX,	***USA***	B. Bassalleck, graduate students
OCU,	***JPN***	K. Yamamoto, T. Yoshida, graduate students
Pusan,	***Korea***	J. K. Ahn, S. J. Kim, graduate students
Tohoku,	***JPN***	Y. Miura, K. Mizunuma, H. Tamura, M. Ukai, graduate students
Tokyo,	***JPN***	K. Tanida
GNU,	***Korea***	J. S. Song, graduate students

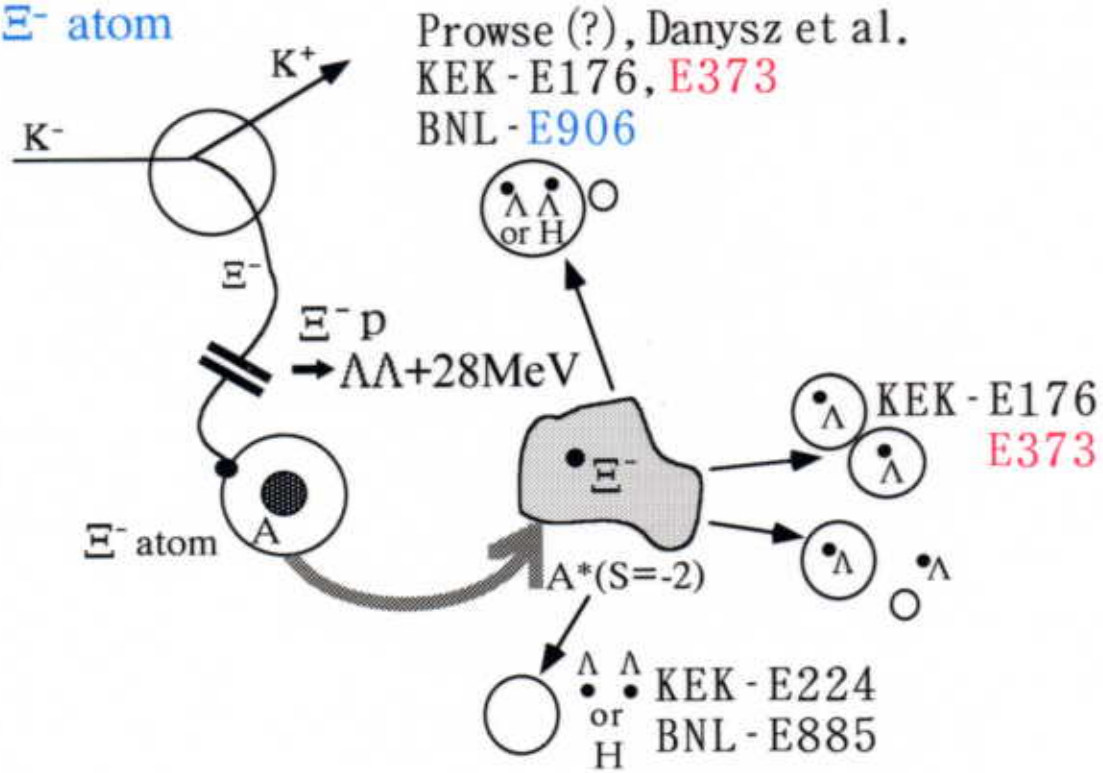
1. Status

Production Method of S=-2 System via (K^-, K^+) reaction

※Direct process



※ Ξ^- atom



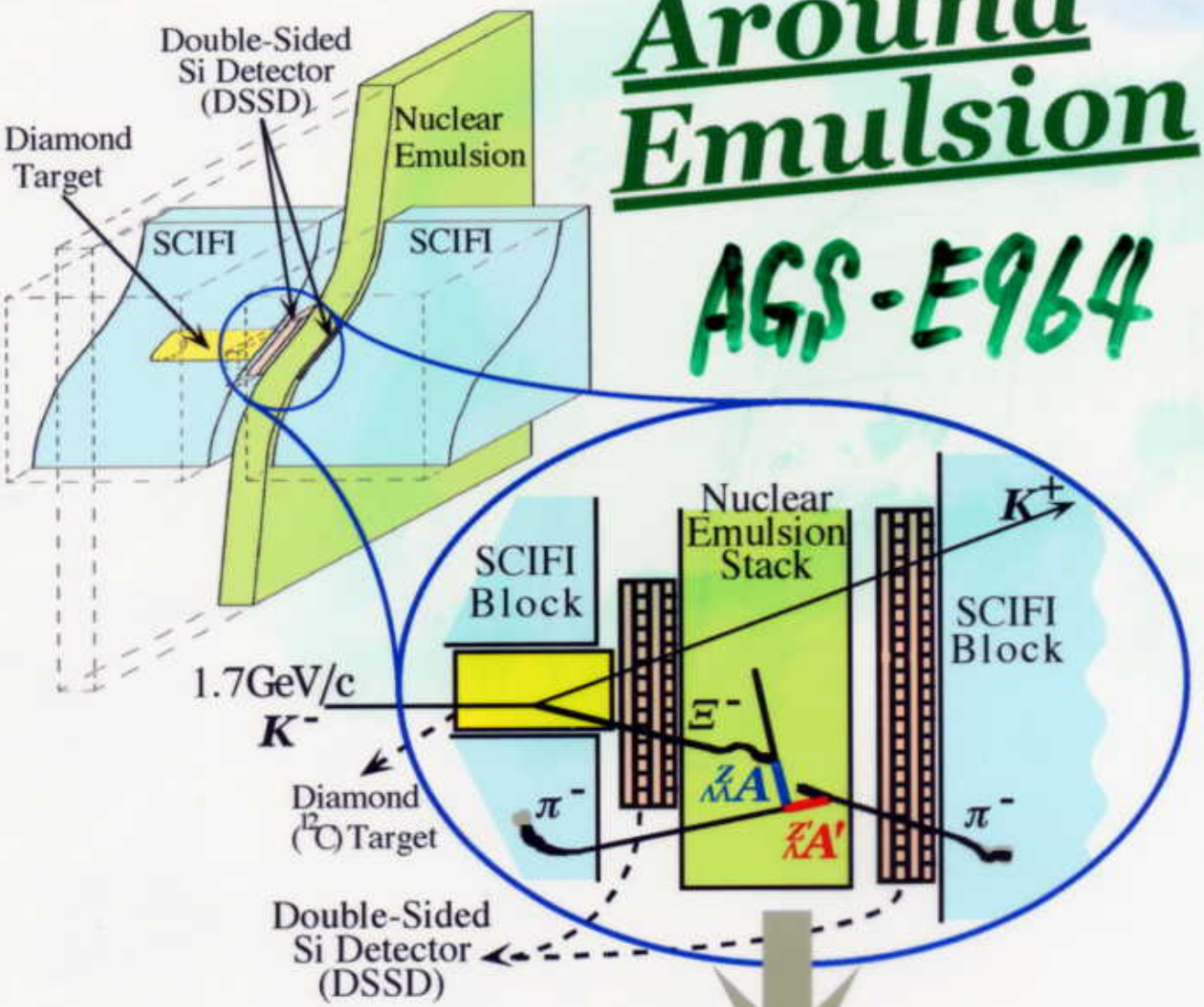
= Statistics =

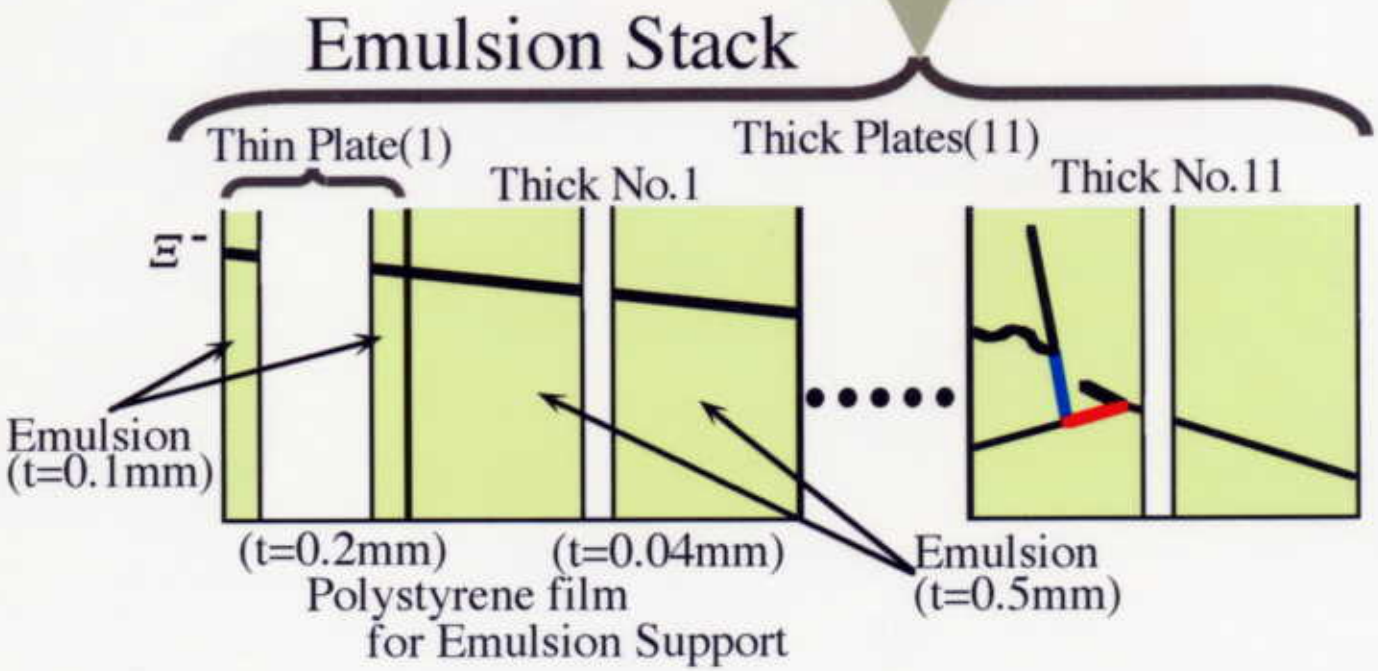
	('87~'90) KEK E176	('98~'00) KEK E373 Current [27%]	('98~'00) KEK E373 designed	('04~'05) BNL E964 designed.
Ξ^- stop	80	~300	10^3	10^4
Double-Λ	1	2	~10	~100
Twin-Λ	2	2	several×10	several×10^2
(K^-, K^+) int. in Em	6×10^3	several×10^4		~10^6
Double-Λ	0 (3 cands.)	—		[several×10^2]

- Sequential weak decays. (non-mesonic)
- nuclides were not identified.
- $Z \geq 8$ in one(?) of three.

Around Emulsion

AGS-E964





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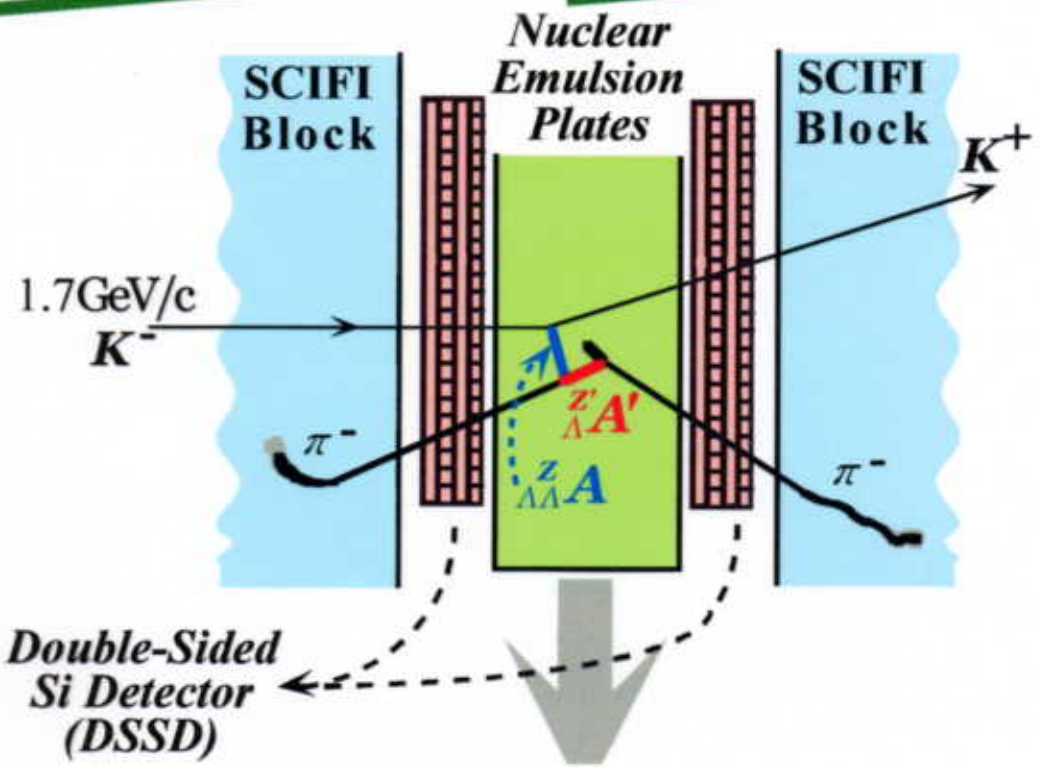
Around Emulsion



Summary.

- BNL-E964 will provide a basic information about heavier $S=-2$ nuclei by the analysis of (K^-, K^+) reaction VTXs in emulsion.

- It will be useful to make a broad chart of $S=-2$ nuclei, which shall be one of important issues for high-intensity K^- beam line at JHF.