



March 15, 2007

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Dr. K. Nakazawa
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Gifu University

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Dear Drs. Imai, Nakazawa, and Tamura:

Your J-PARC proposal titled "E07: Systematic Study of Double Strangeness System with an Emulsion-counter Hybrid Method" has been reviewed again in the second meeting of the Program Advisory Committee for the Experiments at the 50-GeV Proton Synchrotron at J-PARC, held on January 10-12, 2007, regarding its technical feasibility receiving an FIFC (Facility Impact and Financing Committee) report (see attachment). The committee checked the fulfillment of requirements for Stage-2 approval and provided the following statement.

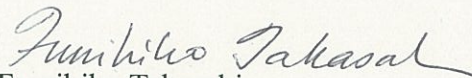
E07: Systematic Study of Double Strangeness System with an Emulsion-counter Hybrid Method

The PAC received a report from the FIFC committee on the evaluation of the experiment. There is no major technical problem in the experiment. The FIFC judges that the installation of Kurama magnet is both possible and preferable for acquiring more statistics. The FIFC considers that good alignment between the two DSSD detectors and the emulsion stack is important for an efficient scanning. The strategy of the alignment procedure is, however, not well documented and reviewed.

The PAC recommends stage-2 approval for E07. The PAC takes note of the issues associated with alignment and would like to hear the strategy of the E07 group at a future meeting.

Based upon this PAC's advice, we are granting by this letter stage-2 approval under the condition that the experimental group reports the strategy for the issues associated with alignment at a future PAC meeting. Execution of the experiment is, however, subject to the experiment support money under the J-PARC operation scheme, which is yet to be established, unless all the expenditure will be covered by the Grant-in-Aid money budget.

Sincerely,



Fumihiko Takasaki

Director

Institute of Particle and Nuclear Physics

KEK



Shoji Nagamiya

Director

J-PARC Center

FIFC REPORT

E07: "SYSTEMATIC STUDY OF DOUBLE STRANGENESS SYSTEM WITH AN EMULSION-COUNTER HYBRID METHOD"

7.1 Detector system

E07 is the experiment to acquire $\sim 10^4$ Ξ stops in the emulsion which is 10 times more than that of the previous experiment E373 at KEK-PS, and to observe an order of 10^2 $S=-2$ nuclei. The experimental setup is inherited from E373, but silicon trackers are newly added in front of and behind the emulsion stack for the better reconstruction efficiency.

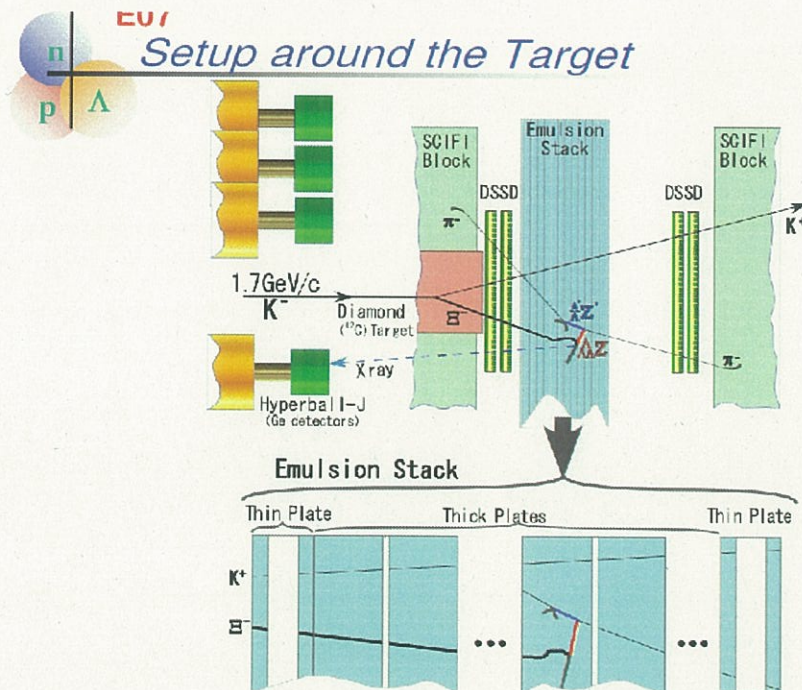


Fig. 7.1 Layout of E07 experiment.

The committee does not foresee any technical problems in this setup and basically endorses the original design of the experiment. However, there are two concerns raised. One is related to the choice of a spectrometer magnet. The use of the SKS magnet instead of the originally proposed KURAMA would reduce the acceptance by a factor 2. This reduction will reflect directly to the total amount of the emulsion. Apparently there

is no strong reason to use SKS unless a technical difficulty to remove SKS or to let KURAMA coexist with SKS is encountered. Therefore the committee favors the use of KURAMA for this experiment.

Another concern is on the method to align two DSSDs and the emulsion stack. It is normally achieved using a high statistics beam data. However, it might be difficult to use tracks recorded in the emulsion for this purpose since the stack is frequently replaced and number of tracks used for the alignment is limited. Since the question has not yet answered to by the experiment, the committee expects to hear the strategy on this issue from the group at the coming PAC.

7.2 Safety

The chamber gases are inflammable. An exhaust gas control and a gas leak detector should be equipped. Inspection and a check are required before its use.

7.3 Experimental cost

The E07 group has estimated the emulsion related cost to be about 1 oku-yen, of which 3,500 man-yen has already been spent to purchase half the emulsion necessary for the KURAMA option. Although the group is applying to a grant for the tools and chemicals for development, they have no plan to secure the remaining half of the emulsion. The microscopes for scanning will be provided by collaborators. The detectors other than emulsion will be supplied from other experiment groups.

7.4 Human resources

There seems to be no big problem in group organization and man-power of this experiment. But the comment in 10.4 is referred.

10.4 Human resources

E05, 13, 19, 07 collaborations consist of reputable physicists who have performed many experiments at KEK-PS. We believe each experiment will be performed as proposed. However, many physicists have signed up for more than one proposal. The committee feels comfortable if the actual commitment of each participant becomes clear. Please report to the PAC in term of person-year of each participant.