To Office of Experimental Planning and Coordination

Date 8 April 2005

MACHINE TIME EXECUTION

REPORT (2004-5-2CYCLE)

Experimental Group	E391a	Reporter	T. Inagaki
Scheduled Period and Shift	From 17:00 of 14 Feb. to 9:00 of 7 Mar. (55 shifts)	Main, Sub, Para	Main
Experimenters About 35 people joined to take shift.			

SUMMARY OF EXECUTION AND RESULTS

We continuously ran in a same condition.

One of the topics in this period is an effect of the earth quake, which happened at 4:47am on February 16. Detector was safe and also both the accelerator and beam-channel showed no trouble. A problem only appeared as a change of signal offset for the summed signals.

In E391a, signals from every detector are processed in the K0 hall near the detector in the distance of several meters to prevent from distortion of signal shape. An AD (amp-discri) modeule (8-ch inputs) outputs three kinds of signals, through 8 individual outputs, 8 digital (discriminated and shaped at the threshold of less than 1mV) individual signals, and a summed signal over 8 inputs. Since the through signal is fed to ADC after a 90m cable and the digital signal to TDC through a 300ns delay chip in the AD module, the summed signal comes to the electronic hut earlier by 300ns, which is used for trigger logic. There is no in-out of long delay cables from the hut.

Basically, we observed a large voltage difference (hundreds mV) between K0 and electronics hut and more over between the grounds, existed and newly prepared by E391a in the K0. We tighten the ground line and only used the E391a ground with floating in other places. The shift might arise from a change of the ground loop, because the summed signal line is an only line of dc-couple. For CsI, we set 60 mV threshold for trigger and the shift was at most 20 mV and different sign for left-right place with the beam axis. The offset (dc level) was adjusted several times, because it suddenly changed at the earth quake and gradually returned to the original. We learned from this accident that the use of such a long line of analog signal might be avoided, must change at JPARC, for the very sensitive measurement as E391a, and that it is better to reduce ground difference in JPARC.

EXECUTED MACHINE TIME, BEAM CONDITION, DOWN TIME etc.

We lost 32 hours (4 shifts) due to many times of breaks, major two are 5 hours for a check after the earth quake and 7 hours due to a trouble of the extraction system.

Then, the executed time in this period was 51 (=55-4) shifts.

COMMENTS