J-PARC Hadron Hall : EXPERIMENTAL REPORT on RUN#

		Date(submitted)	July 23, 2015
Group	E36	Beam line	K1.1BR
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Summary and Results

Detector commissioning

1) Full equipment of 12 gaps: All the 12 gaps were commissioned with full equipment of MWPC, TOF, PGC, and electronics after the necessary repair in May.
2) PID tuning: The HV and thresholds of AC and PGC were tuned carefully to provide a trigger condition for the *e*+ trigger.
3) TOF tuning: HV and threshold of TOF1 and TOF2 counters were carefully tuned again.
4) DAQ tuning: DAQ was tuned including the DAQ of CsI(Tl) using VF48 FADC. It was made possible to acquire data with a trigger rate of nearly 1000 events/spill.
5) Tuning of "Dark Photon trigger" : The scheme of DP trigger inclusion was studied and an optimum logic was established.

Physics run

1) With the "half-open slit setting", data was collected under the "physics trigger" condition of "*K*μ2-1/25 pre-scaled and *e*+" checking measurement conditions for about 4 days.
2) With the "full-open slit setting" limited by the allowable maximum trigger rate, data was acquired with the "physics trigger" condition, for about 3 days.
3) CsI(Tl) calibration : By using *K*μ2 events firing a single module, data was taken for 1 day

Beam tuning

1) Q7/Q8 tuning: The last Q doublet was tuned again finely by watching the target beam profile which became available.
2) For the fall run in which the rigger should be purified, the real maximum kaon beam rate was measured by tuning CM current *etc.* It was found that we can double the rate .

SCHEDULED and EXECUTED MACHINE TIME, BEAM CONDITION, DOWN TIME, Priority etc.

Machine time etc.

- Accelerator ON time : 490 kW days (including beam stop of 70 kW days)
- User time : 420 kW days
  - Detector commissioning time including "down time" of 20 kW days)* : 120 kW days
  - DAQ ON time : 300 kW days (Data for R_K : 210 kW days, others : 90 kW days)
    - The data taken during the instability of Q6 or Q7 are questionable for analysis use.

Comments/Requests

- Due to mis-setting of CM current, we extracted mistakenly a huge flux (10^8/spill) of pion beam causing an interlock shutdown of the Hadron Facility, on June 5.
- The repair of the PS of Q7 and Q6 is definitely necessary for the fall run.
- The high temperature in the hall resulted in several troubles. It is requested that the new 74 kM^3/Hr exhaust system should be operational soon.