

## J-PARC Hadron Hall : EXPERIMENTAL REPORT on RUN#45

	Date(submitted)	Jan.17, 2013
Group	T48(E36)	Beam line K1.1BR
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<p>Summary and Results</p> <p>1) Beam instruments tuning: a BDC(Beam defining counter), TOF counters, 2 Gas Cherenkov counters, 2 Finger counters, and an Aerogel Cherenkov counter</p> <p>2) Muon Beam tuning: By tuning Q1, Q2, and CM settings, we successfully extracted 250 MeV/c muon beam with mu/e ratio of about 0.5 on +-150 kV ESS voltage condition.</p> <p>3) Aerogel Cherenkov Counter test The AC counter efficiency was measured using 0.25 GeV/c e+ and mu+ beam for 6 different incident position and angle combinations with following conditions.</p> <ul style="list-style-type: none"> <li>● Aerogel n=1.05, TL=40 mm, 20 mmt, a PD2 (polygonal diffused 2) mirror</li> <li>● Aerogel n=1.05, TL=40 mm, 20 mmt, a Diffused mirror</li> <li>● Aerogel n=1.05, TL=40 mm, 20 mmt, a PF1 (polygonal flat 1) mirror</li> <li>● Aerogel n=1.05, TL=40 mm, 20 mmt, a PF2 (polygonal flat 2) mirror</li> <li>● Aerogel n=1.08, TL=20 mm, 20 mmt, the PF1 mirror</li> <li>● Aerogel n=1.08, TL=20 mm, 20 mmt, the PD2 mirror</li> <li>● Aerogel n=1.08, TL=20 mm, 20 mmt, the PF2 mirror</li> <li>● Aerogel n=1.05, TL=40 mm, 40 mmt, the Diffused mirror</li> </ul> <p>Due to lack of the beam time coming from accelerator troubles, we were not able to take all data of angle and position combinations for each condition.</p> <p>4) 105 MeV/c positron tuning: By tuning D2 and D3 settings, we successfully extracted almost pure positron beam whose momentum is 105 MeV/c without the ESS. We set up a NaI(Tl) detector at the most upstream position of the K1.1BR area, and measured the beam energy with several different slit conditions to reduce the momentum width.</p>		
<p>SCHEDULED and EXECUTED MACHINE TIME, BEAM CONDITION, DOWN TIME, Priority etc.</p> <p>1) Scheduled time: 69 Hrs (from Dec. 22 9:00 to Dec 26 18:00)</p> <p>2) Executed machine time: 53.5 Hrs (from Dec. 22 9:00 to Dec. 26 18:00)</p> <p>3) Beam condition:     - 250 MeV/c and 105 MeV/c with several K1.8-D1 settings                               - MR 10.8 kW</p> <p>4) Down time:     - Accelerator troubles (MR SX septum, MR beam loss, Linac HV power supply, Linac SDDL14)                           - Area entering to change AC angle conditions and AC mirrors.</p>		
<p><u>Comments/Requests</u></p> <p>1) Sometimes we observed a sudden change of the e/mu ratio which could be attributed to either the instability of the secondary beam line magnet or the primary beam line vertical position on the T1 target.</p> <p>2) The Q6 reading sometimes became strange. Its fixing will be necessary.</p>		