

J-PARC Hadron Hall : EXPERIMENTAL REPORT on RUN#62

		Date(submitted)	2015/05/07
Group	E15	Beam line	K1.8BR
Reporter	Name	e-mail address	
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Summary and Results

Production target : Au

Commissioning run @ -0.9/-1.0/-1.1GeV/c K [K1.8ESS1=+/-170~250kV]

- ✓ Beam-line tuning (Apr.12)
7.0h
- ✓ Detector commissioning with H2-target @ -0.9GeV/c (Apr.14)
data taking: 2.6h [46M K⁻ on target, 15K forward-neutral trig.]
- ✓ Detector commissioning with H2-target @ -1.1GeV/c (Apr.14~15)
data taking: 6.4h [420M K⁻ on target, 110K forward-neutral trig.]
- ✓ Detector commissioning with empty-target @ -1.0GeV/c (Apr.16)
data taking: 8.3h [290M K⁻ on target, 55K forward-neutral trig.]

E15 calibration run @ -1.0GeV/c K [K1.8ES1=+/-200kV]

- ✓ Calibration run with H2-target @ -1.0GeV/c (Apr. 27~May 3)
data taking: 72.5h [5.3G K⁻ on target, 1.3M forward-neutral trig.]
- ✓ Calibration run with D2-target @ -1.0GeV/c (May 4~7)
data taking: 52.9h [4.0G K⁻ on target, 1.5M forward-neutral trig.]

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

date	mode	MR	beam condition	run	start time	end time	duration	down time	up time	up time ratio
2015/4/12	HD tuning	3kW	-0.9/-1.0/-1.1 GeV/c	beam-line tuning	0:39	8:57	8:18	1:15	7:02	85%
2015/4/14	HD tuning	12kW	-0.9 GeV/c	commissioning run with H2	5:09	8:55	3:46	0:04	3:42	98%
2015/4/14	HD tuning	12kW	-1.1 GeV/c	commissioning run with H2	22:36	23:30	0:53	0:04	0:48	92%
2015/4/15	HD tuning	12kW	-1.1 GeV/c	commissioning run with H2	0:10	9:00	8:50	0:56	7:53	89%
2015/4/16	HD tuning	12kW	-1.0 GeV/c	commissioning run with empty-target	9:16	21:00	11:43	0:59	10:44	92%
2015/4/27	user op.	24kW	-1.0 GeV/c	calibration run with H2	22:26	24:00	1:34	0:13	1:20	86%
2015/4/28	user op.	24kW	-1.0 GeV/c	calibration run with H2	0:00	9:00	9:05	0:30	8:34	94%
2015/4/28	user op.	24kW	-1.0 GeV/c	calibration run with H2	21:33	24:00	2:26	0:07	2:18	95%
2015/4/29	user op.	24kW	-1.0 GeV/c	calibration run with H2	0:00	9:17	9:17	0:25	8:51	95%
2015/5/1	user op.	27kW	-1.0 GeV/c	calibration run with H2	5:17	24:00	18:43	1:31	17:11	92%
2015/5/2	user op.	27kW	-1.0 GeV/c	calibration run with H2	0:00	24:00	24:00	0:19	23:40	99%
2015/5/3	user op.	27kW	-1.0 GeV/c	calibration run with H2	0:00	15:00	15:00	0:18	14:41	98%
2015/5/4	user op.	27kW	-1.0 GeV/c	calibration run with D2	19:57	24:00	4:03	0:12	3:50	95%
2015/5/5	user op.	27kW	-1.0 GeV/c	calibration run with D2	0:00	24:00	24:00	2:31	21:28	89%
2015/5/6	user op.	27kW	-1.0 GeV/c	calibration run with D2	0:00	24:00	24:00	1:30	22:29	94%
2015/5/7	user op.	27kW	-1.0 GeV/c	calibration run with D2	0:00	6:00	6:00	0:08	5:51	98%
total							171:40	11:08	160:31	94%

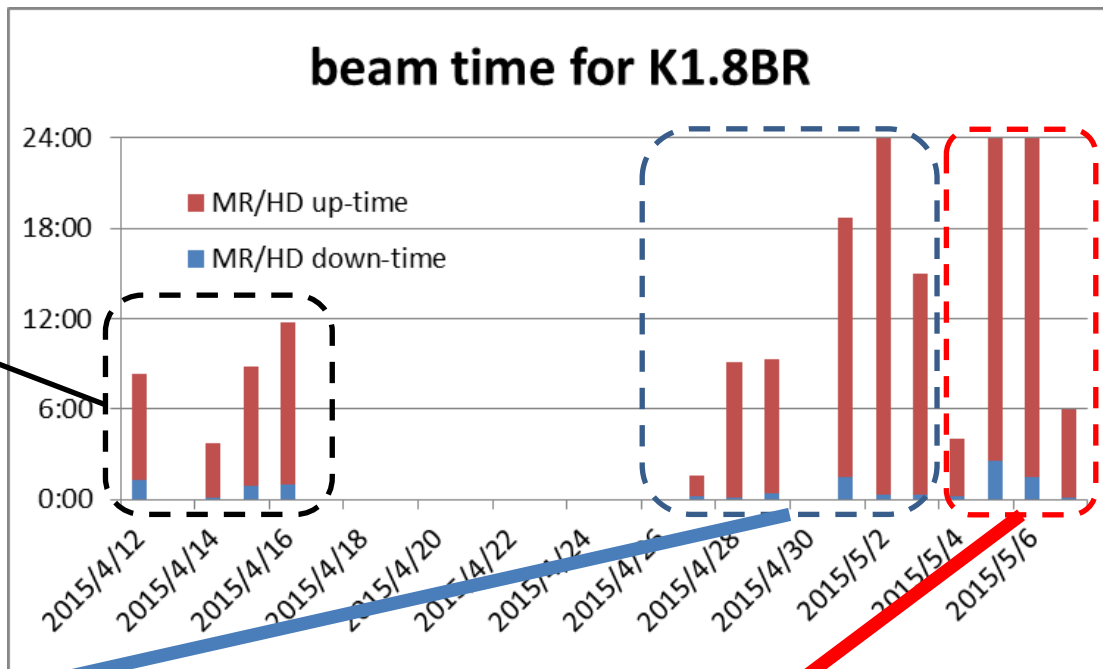
Comments/Requests

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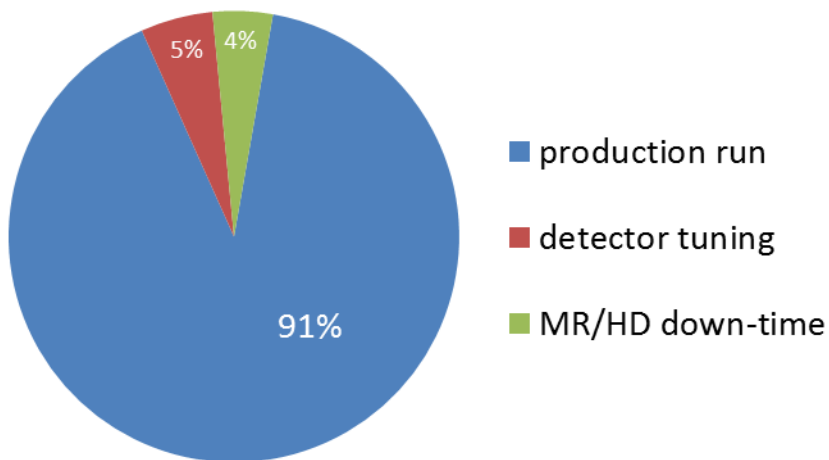
Executed Beam-time @ RUN#62

Commissioning run

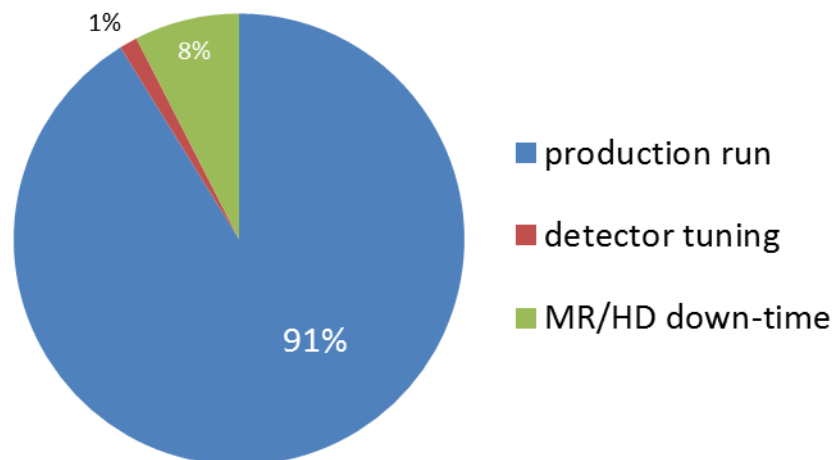
- Beam-line tuning
 - 7.0h
- -0.9GeV/c K w/ H2
 - 2.6h
- -1.1GeV/c K w/ H2
 - 6.4h
- -1.0GeV/c K
 - 8.3h



H2-run@-1.0GeV/c [80h in 4/27-5/3]

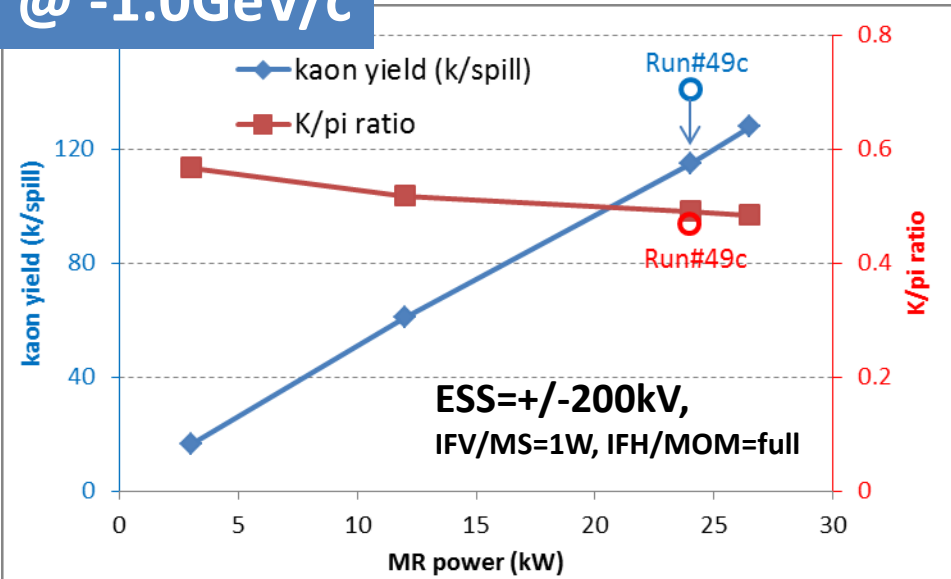


D2-run@-1.0GeV/c [58h in 5/4-5/7]



MR dep.
@ -1.0GeV/c

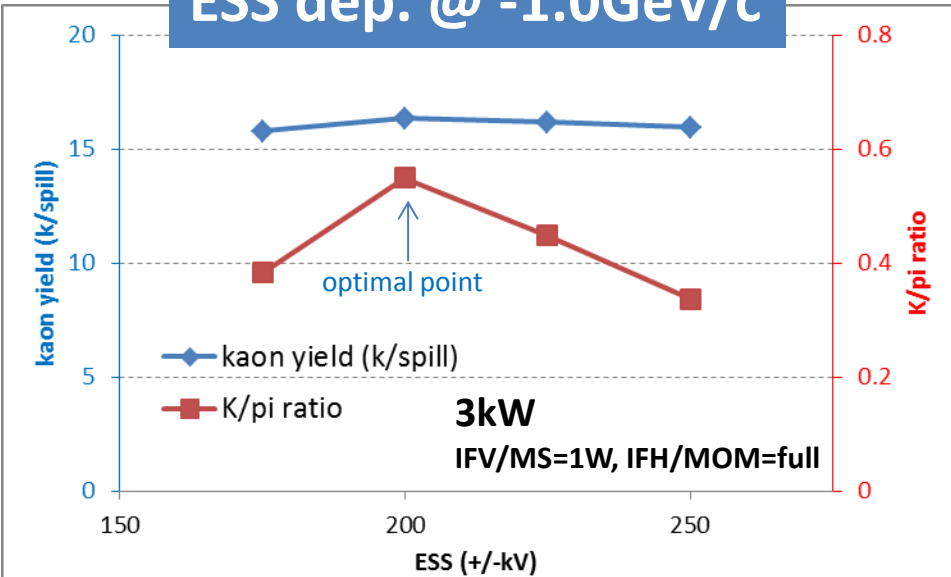
Kaon Yield @ RUN#62



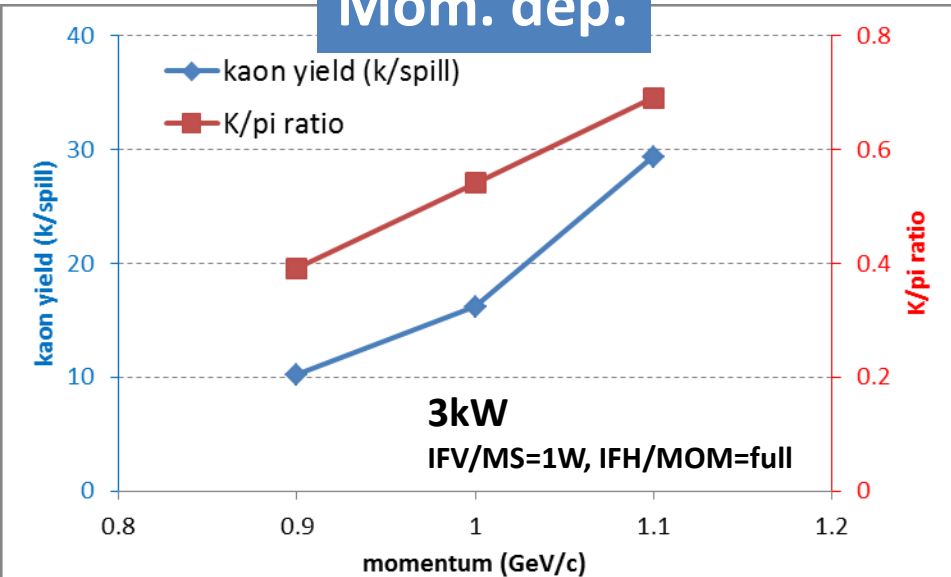
	Kaon yield	K/pi ratio
Run#49c (24kW)	140 k/spill	0.45
Run#62 (24kW)	110 k/spill	0.48
(26.5kW)	130 k/spill	0.47

- Kaon yield decreases as expected (factor ~0.8)
- K/p ratio is almost the same

ESS dep. @ -1.0GeV/c



Mom. dep.



ESS dependence is largely changed!

Calibration Run with H₂/D₂-target @ RUN#62

- Calibration run for E15 was successfully accomplished
 - aiming to evaluate elementary N(K⁻,n)X reactions
 - all detector systems worked well
 - No serious accelerator/HD-troubles in Run#62
 - Ready for the E15 2nd experiment (= 50G K⁻ on target)

	Exp. Target	Primary-beam intensity	Secondary-kaon intensity	Duration	Kaons on target (w/ tgt selection)
May, 2013 (Run#49c)	³ He	24 kW (30 Tppp, 6s)	140 k/spill	88 h	5.3 x 10 ⁹
Apr-May, 2015 (Run#62)	H ₂	26.5 kW (33 Tppp, 6s)	130 k/spill	73 h	3.7 x 10 ⁹
Apr-May, 2015 (Run#62)	D ₂	26.5 kW (33 Tppp, 6s)	130 k/spill	53 h	2.8 x 10 ⁹

* production target: Au 50% loss, spill length: 2s, spill duty factor: 35~45%, K/pi ratio: ~1/2

* ~70% of beam kaons hit the fiducial volume of ³He target



The
E15
collaboration

MB-RUN#2
Apr - May, 2015
9 G Kaon on H2/D2 target.

END
of
RUN 6 2