

Change in particle flux if the entire beampipe is removed (Simulation by M. Shupe)

G

th.n:	1246 Hz	-69%
hi.n:	224 Hz	-70%
had:	41 Hz	-75%
c.r.:	7 Hz	-71%
p.r.:	1 Hz	-70%

th.n. = thermal neutron rate (neutrons < 100 keV)
 hi.n. = high energy neutron rate (neutrons > 100 keV)
 had = charged and neutral hadron rate > 20 MeV
 c.r. = counting rate
 $= 0.0005n + 0.0117 \gamma + (\mu + p + \pi + 0.25e) / 2$
 p.r. = penetrating particle rate
 $= 0.1 \cdot 0.0117 \gamma + (\mu + p + \pi + 0.25e) / 2$

F

th.n:	1190 Hz	-68%
hi.n:	270 Hz	-66%
had:	47 Hz	-68%
c.r.:	8 Hz	-69%
p.r.:	2 Hz	-68%

Forward
Toroid

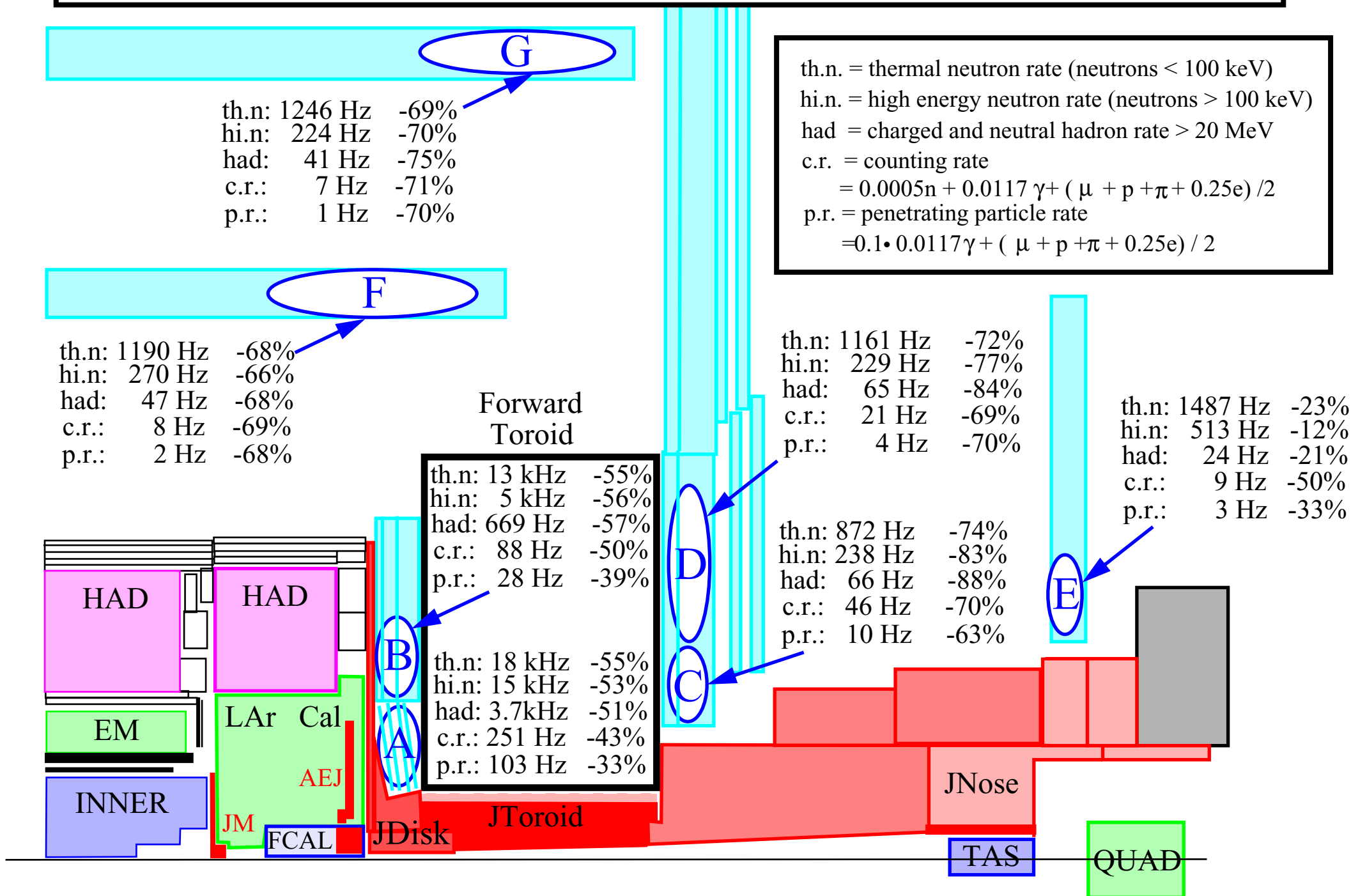
th.n:	13 kHz	-55%
hi.n:	5 kHz	-56%
had:	669 Hz	-57%
c.r.:	88 Hz	-50%
p.r.:	28 Hz	-39%

th.n:	18 kHz	-55%
hi.n:	15 kHz	-53%
had:	3.7kHz	-51%
c.r.:	251 Hz	-43%
p.r.:	103 Hz	-33%

th.n:	1161 Hz	-72%
hi.n:	229 Hz	-77%
had:	65 Hz	-84%
c.r.:	21 Hz	-69%
p.r.:	4 Hz	-70%

th.n:	1487 Hz	-23%
hi.n:	513 Hz	-12%
had:	24 Hz	-21%
c.r.:	9 Hz	-50%
p.r.:	3 Hz	-33%

th.n:	872 Hz	-74%
hi.n:	238 Hz	-83%
had:	66 Hz	-88%
c.r.:	46 Hz	-70%
p.r.:	10 Hz	-63%



Change in particle flux if the front part of the VA beampipe is removed, (Simulation by M. Shupe)

G

th.n: 4.3 kHz +5%
 hi.n: 752 Hz +5%
 had: 167 Hz +4%
 c.r.: 26 Hz +6%
 p.r.: 5 Hz +5%

th.n. = thermal neutron rate (neutrons < 100 keV)
 hi.n. = high energy neutron rate (neutrons > 100 keV)
 had = charged and neutral hadron rate > 20 MeV
 c.r. = counting rate
 $= 0.0005n + 0.0117 \gamma + (\mu + p + \pi + 0.25e) / 2$
 p.r. = penetrating particle rate
 $= 0.1 \cdot 0.0117 \gamma + (\mu + p + \pi + 0.25e) / 2$

F

th.n: 4.0 kHz +4%
 hi.n: 793 Hz +5%
 had: 150 Hz +6%
 c.r.: 26 Hz +3%
 p.r.: 6 Hz -11%

Forward
Toroid

th.n: 32 kHz +3%
 hi.n: 12 kHz +8%
 had: 1.6kHz +8%
 c.r.: 188 Hz +8%
 p.r.: 46 Hz +4%

th.n: 3.9 kHz +2%
 hi.n: 837 Hz +2%
 had: 352 Hz +5%
 c.r.: 75 Hz +15%
 p.r.: 16 Hz +8%

th.n: 2.0 kHz +2%
 hi.n: 630 Hz +9%
 had: 37 Hz +2%
 c.r.: 22 Hz +16%
 p.r.: 5 Hz +13%

D

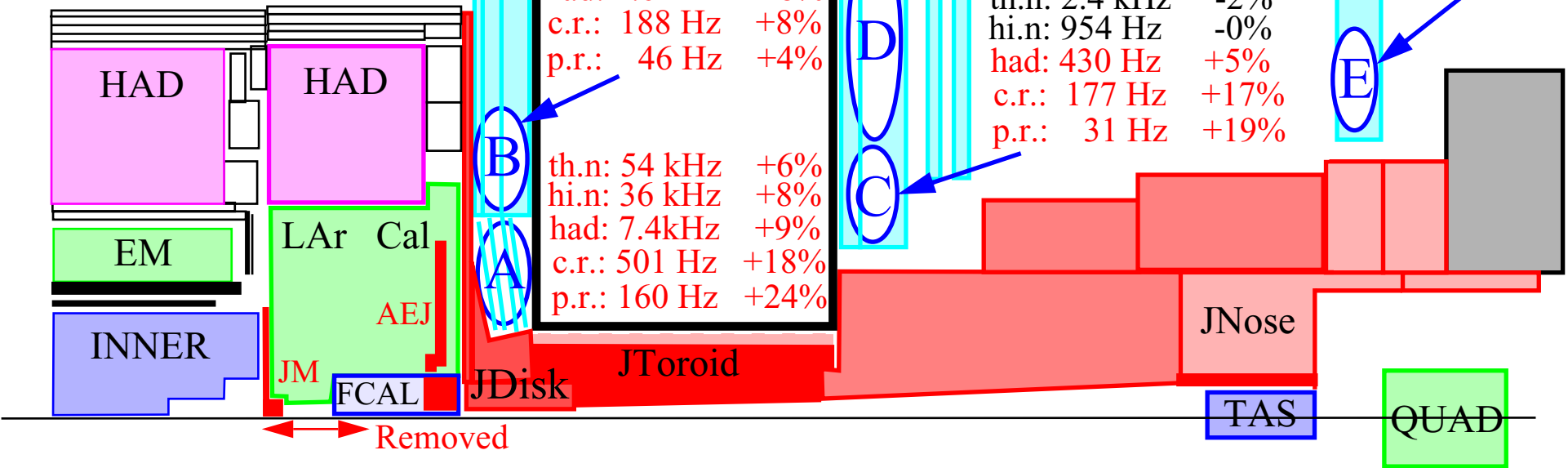
th.n: 2.4 kHz -2%
 hi.n: 954 Hz -0%
 had: 430 Hz +5%
 c.r.: 177 Hz +17%
 p.r.: 31 Hz +19%

E

th.n: 54 kHz +6%
 hi.n: 36 kHz +8%
 had: 7.4kHz +9%
 c.r.: 501 Hz +18%
 p.r.: 160 Hz +24%

B

A



Change in particle flux if a part of the VA beampipe is removed.

(Simulation by M. Shupe)

G

th.n:	3.5 kHz	-14%
hi.n:	678 Hz	-5%
had:	144 Hz	-10%
c.r.:	22 Hz	-10%
p.r.:	5 Hz	-5%

th.n. = thermal neutron rate (neutrons < 100 keV)
 hi.n. = high energy neutron rate (neutrons > 100 keV)
 had = charged and neutral hadron rate > 20 MeV
 c.r. = counting rate
 $= 0.0005n + 0.0117 \gamma + (\mu + p + \pi + 0.25e) / 2$
 p.r. = penetrating particle rate
 $= 0.1 \cdot 0.0117 \gamma + (\mu + p + \pi + 0.25e) / 2$

F

th.n:	3.2 kHz	-16%
hi.n:	654 Hz	-14%
had:	120 Hz	-16%
c.r.:	20 Hz	-20%
p.r.:	4 Hz	-41%

Forward
Toroid

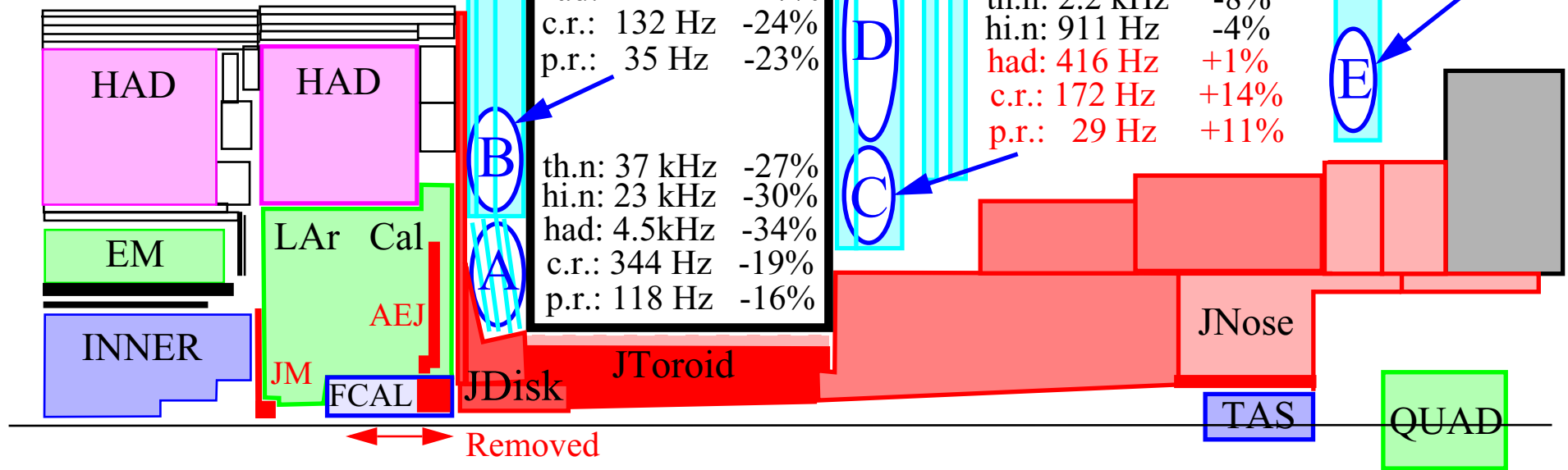
th.n:	22 kHz	-29%
hi.n:	9 kHz	-26%
had:	1 kHz	-27%
c.r.:	132 Hz	-24%
p.r.:	35 Hz	-23%

th.n:	3.5 kHz	-8%
hi.n:	818 Hz	-0%
had:	329 Hz	-2%
c.r.:	71 Hz	+8%
p.r.:	14 Hz	-2%

th.n:	2.0 kHz	-0%
hi.n:	663 Hz	+15%
had:	38 Hz	+5%
c.r.:	22 Hz	+15%
p.r.:	5 Hz	+10%

th.n:	37 kHz	-27%
hi.n:	23 kHz	-30%
had:	4.5kHz	-34%
c.r.:	344 Hz	-19%
p.r.:	118 Hz	-16%

th.n:	2.2 kHz	-8%
hi.n:	911 Hz	-4%
had:	416 Hz	+1%
c.r.:	172 Hz	+14%
p.r.:	29 Hz	+11%



Change in particle flux if parts of the VA, VT and VJ beampipes are removed (Simulation by M. Shupe)

G

th.n:	2.0 kHz	-52%
hi.n:	317 Hz	-56%
had:	62 Hz	-61%
c.r.:	11 Hz	-54%
p.r.:	2 Hz	-55%

th.n. = thermal neutron rate (neutrons < 100 keV)
 hi.n. = high energy neutron rate (neutrons > 100 keV)
 had = charged and neutral hadron rate > 20 MeV
 c.r. = counting rate
 = $0.0005n + 0.0117 \gamma + (\mu + p + \pi + 0.25e) / 2$
 p.r. = penetrating particle rate
 = $0.1 \cdot 0.0117 \gamma + (\mu + p + \pi + 0.25e) / 2$

F

th.n:	1.9 kHz	-50%
hi.n:	392 Hz	-48%
had:	69 Hz	-52%
c.r.:	12 Hz	-52%
p.r.:	3 Hz	-55%

Forward
Toroid

th.n:	22 kHz	-31%
hi.n:	8 kHz	-31%
had:	949 Hz	-34%
c.r.:	127 Hz	-27%
p.r.:	35 Hz	-22%

th.n:	1.8 kHz	-53%
hi.n:	229 Hz	-77%
had:	108 Hz	-68%
c.r.:	36 Hz	-45%
p.r.:	7 Hz	-53%

th.n:	1.6 kHz	-18%
hi.n:	554 Hz	-4%
had:	34 Hz	-6%
c.r.:	15 Hz	-25%
p.r.:	3 Hz	-24%

th.n:	37 kHz	-29%
hi.n:	25 kHz	-25%
had:	5.3kHz	-22%
c.r.:	375 Hz	-11%
p.r.:	125 Hz	-11%

th.n:	1.2 kHz	-32%
hi.n:	367 Hz	-63%
had:	133 Hz	-68%
c.r.:	84 Hz	-44%
p.r.:	14 Hz	-45%

