

The matrix table from PWG

YR Detector Matrix_09012020

This application is out of date, and must be restarted. All of your changes have been saved.

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U			
			Instrumentation	Resolution	Allowed	minimum-pT	Si-Vertex	Resolution	PID	min E	p-Range (GeV/c)	Separati	Resolution	OE/E	Energy									
2																								
3	-6.9 to -5.8	1 p/A	Auxiliary Detectors	low-Q2 tagger	$\sigma_{\theta/\theta} < 1.5\%$; 10-6 < Q2 < 10-2 GeV ²																			
4	-5.0 to -4.5						300 MeV pions																	
5	4.5 to -4.0				Instrumentation to separate charged particles from photons			300 MeV pions		2%/√E(+1-3%)		50 MeV												
6	-4.0 to -3.5	Central Detector	Backward Detector			<100MeV pions, 135MeV kaons				50 MeV				~50%/√E + 6%										
7	-3.5 to -3.0					$\sigma_{p/p} \sim 0.1\% \oplus 0.5\%$	~5% or less X	<100MeV pions, 135MeV kaons				50 MeV												
8	-3.0 to -2.5					$\sigma_{p/p} \sim 0.1\% \oplus 0.5\%$		<100MeV pions, 135MeV kaons	$\sigma_{xy} \sim 30/pT \mu m + 40 \mu m$			50 MeV	< 7 GeV/c											
9	-2.5 to -2.0					$\sigma_{p/p} \sim 0.05\% \oplus 0.5\%$		<100MeV pions, 135MeV kaons	$\sigma_{xy} \sim 30/pT \mu m + 20 \mu m$	2%/√E(+1-3%)	π suppression up to 1:1E-4	50 MeV				~45%/√F+6%								
10	-2.0 to -1.5							<100MeV pions, 135MeV kaons		7%/√E(+1-3%)		50 MeV												
11	-1.5 to -1.0							<100MeV pions, 135MeV kaons		7%/√E(+1-3%)	50 MeV													
12	-1.0 to -0.5				Barrel			<100MeV pions, 135MeV kaons	$\sigma_{xyz} \sim 20 \mu m, d0(z) \sim d0(r\Phi) \sim 20/pT GeV \mu m + 5 \mu m$			50 MeV	≤ 10 GeV/c	≥ 3σ		~85%/√E+7%								
13	-0.5 to 0.0						$\sigma_{p/p} \sim 0.05\% \times p + 0.5\%$		<100MeV pions, 135MeV kaons				50 MeV		≤ 15 GeV/c		~85%/√E+7%							
14	0.0 to 0.5								<100MeV pions, 135MeV kaons				50 MeV		≤ 30 GeV/c		~85%/√E+7%							
15	0.5 to 1.0								<100MeV pions, 135MeV kaons				50 MeV		≤ 50 GeV/c		~85%/√E+7%							
16	1.0 to 1.5		Forward Detectors			<100MeV pions, 135MeV kaons	$\sigma_{xy} \sim 30/pT \mu m + 20 \mu m$			50 MeV	≤ 30 GeV/c													
17	1.5 to 2.0				$\sigma_{p/p} \sim 0.05\% \times p + 1.0\%$		<100MeV pions, 135MeV kaons				50 MeV	≤ 50 GeV/c												
18	2.0 to 2.5						<100MeV pions, 135MeV kaons				50 MeV	≤ 50 GeV/c												
19	2.5 to 3.0			$\sigma_{p/p} \sim 0.1\% \times p + 2.0\%$		<100MeV pions, 135MeV kaons	$\sigma_{xy} \sim 30/pT \mu m + 40 \mu m$	(10-12)%/√E(+1-3%)	3σ e/ft	50 MeV	≤ 30 GeV/c			35%/√E										
20	3.0 to 3.5					<100MeV pions, 135MeV kaons	$\sigma_{xy} \sim 30/pT \mu m + 60 \mu m$				50 MeV	≤ 45 GeV/c												
21	3.5 to 4.0	1 e	Auxiliary Detectors	Instrumentation to separate charged particles from photons		<100MeV pions, 135MeV kaons				50 MeV														
22	4.0 to 4.5							300 MeV pions				50 MeV				35%/√E (goal), <50%/√E (acceptable)*.								
23	4.5 to 5.0					Neutron		300 MeV pions		4.5%/√E for photons	≤ 3 cm	50 MeV												

Combined Inclusive Semi-inclusive Diffractive&Tagging Jets& HQ Exclusive

Explore

η	Energy Resolution	Min E MeV	PID	Energy Resolution	Min E MeV
-4.2 to -2	2.2%/√E+1% <i>Achieved with PMT readout > 35 cm space</i>	20		50%/√E+10%	500
-2 to -1	(4*-8)%/√E+1.5% <i>Upper limit achievable with 40 cm space and projective geometry * better resolution required more (65 cm) space allocated</i>	50		50%/√E +10% Better resolution required more space and R&D	500
-1 to 1	(12-14)%/√E+(2-3)% <i>Feasible with Shashlik Better resolution could be achievable with (8%/√E) sampling cal. and more space or with homogeneous materials PWO (2%/√E) and SciGlass (4-5%/√E) with ~30cm more space</i>	100 50		100%/√E +10%	500
1 to 4.2	(4*-12)%/√E+1.5% <u><i>* better resolution required more (~65 cm) space allocated</i></u>	50		50%/√E+10% <i>35%/√E not possible</i>	500