

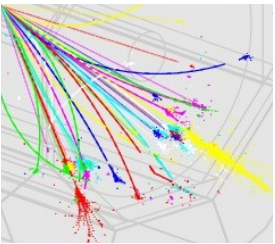
News from RAL

SiD PFA Meeting

09.04.2008

M. Stanitzki

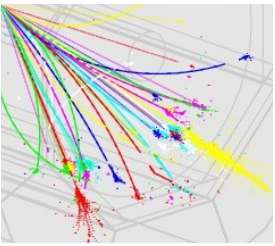




The latest and greatest

- Almost everything has been updated with 200 GeV data (2x100 GeV Jets)
- Using the same setup as for the study shown in January
- Started running with ZZ samples as well
- The HCAL layer and material is using a different Mokka so results are likely a bit inconsistent (not completely finished either)



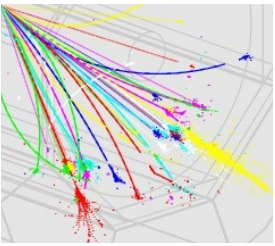


The setups

Detector TAG	B-field	ECAL layers	ECAL cell size	HCAL layers	HCAL cell size	Tracker radius	Tracker length
LDC00Sc	4	40	1x1	40	3x3	1690	2730
SIDish	5	30	1x1	40	3x3	1250	1700
SIDish_r10_z17	5	30	1x1	40	3x3	1000	1700
SIDish_r15_z17	5	30	1x1	40	3x3	1500	1700
SIDish_r125_z15	5	30	1x1	40	3x3	1250	1500
SIDish_r125_z19	5	30	1x1	40	3x3	1250	1900
SIDish_4T	4	30	1x1	40	3x3	1250	1700
SIDish_6T	6	30	1x1	40	3x3	1250	1700
SIDish_hcal50	5	30	1x1	50	3x3	1250	1700
SIDish_hcal60	5	30	1x1	60	3x3	1250	1700
SIDish_ecal40	5	40	1x1	40	3x3	1250	1700
SIDish_hcal_cu	5	30	1x1	40	3x3	1250	1700
SIDish_ecal_05x05	5	30	0.5x0.5	40	3x3	1250	1700
SIDish_45T	4.5	30	1x1	40	3x3	1250	1700
SIDish_55T	5.5	30	1x1	40	3x3	1250	1700



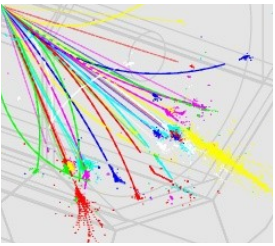
The results



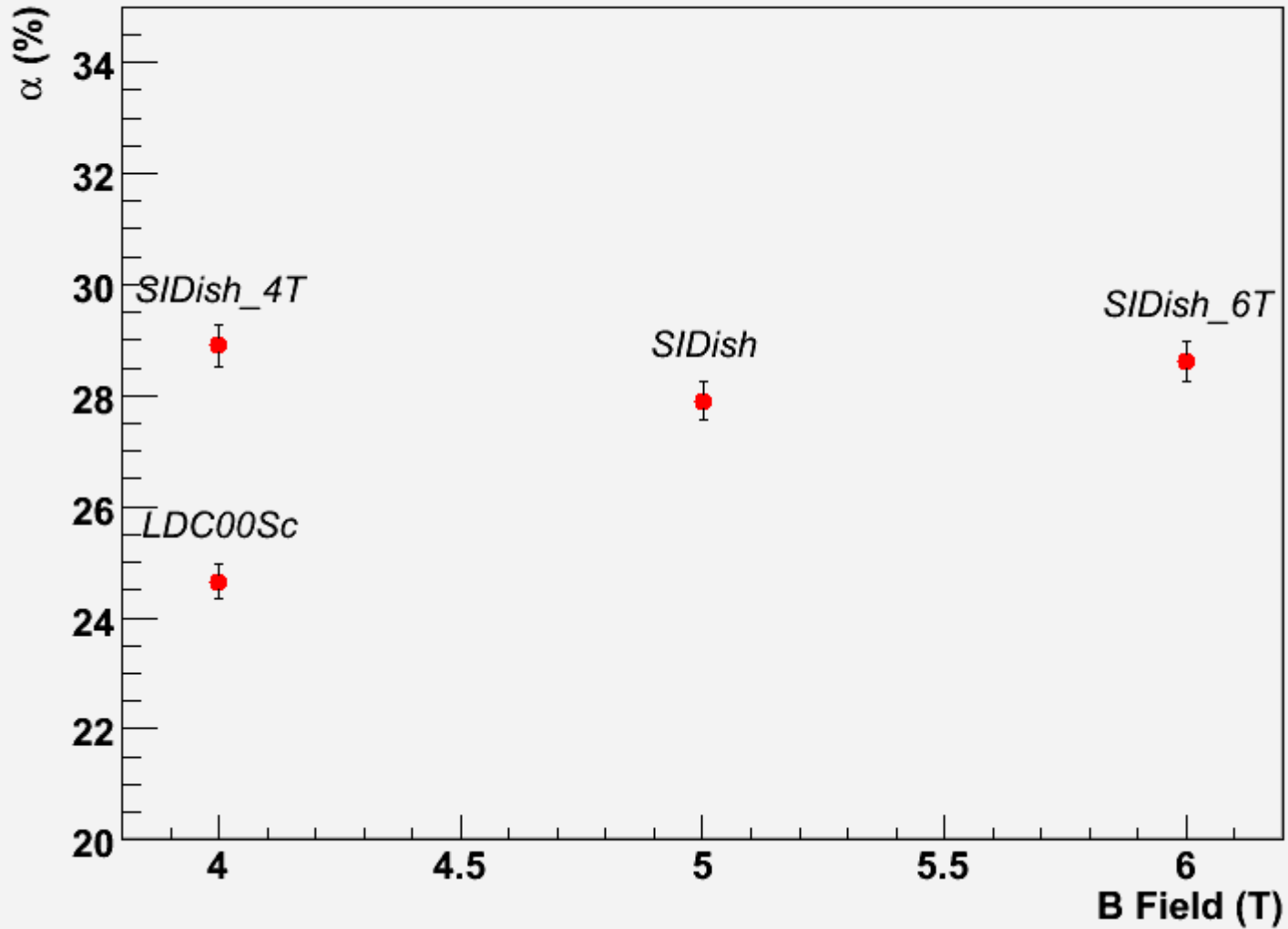
Detector TAG	rms90 (uds45)	Error	in percent	in percent	rms90(uds100)	Error	in percent	in percent
LDC00Sc	0.24649	0.00314	24.6	0.3	0.29693	0.00544	29.7	0.5
SIDish	0.27906	0.00355	27.9	0.4	0.35421	0.00656	35.4	0.7
SIDish_r10_z17	0.30392	0.00387	30.4	0.4	0.42455	0.00786	42.5	0.8
SIDish_r15_z17	0.27721	0.00395	27.7	0.4	0.34404	0.00632	34.4	0.6
SIDish_r125_z15	0.28962	0.00388	29.0	0.4	0.34404	0.00632	34.4	0.6
SIDish_r125_z19	0.28470	0.00362	28.5	0.4	0.36437	0.00671	36.4	0.7
SIDish_4T	0.28898	0.00368	28.9	0.4	0.39411	0.00725	39.4	0.7
SIDish_6T	0.28619	0.00364	28.6	0.4	0.34208	0.00631	34.2	0.6
SIDish_ecal40	0.27140	0.00345	27.1	0.3	0.33947	0.00625	33.9	0.6
SIDish_hcal_cu	0.28770	0.00362	28.8	0.4	0.39207	0.00743	39.2	0.7
SIDish_ecal_05x05	0.28070	0.00357	28.1	0.4	0.35726	0.00653	35.7	0.7
SIDish_45T	0.28820	0.00423	28.8	0.4	0.38992	0.00719	39.0	0.7
SIDish_55T			0.0	0.0	0.35841	0.00660	35.8	0.7



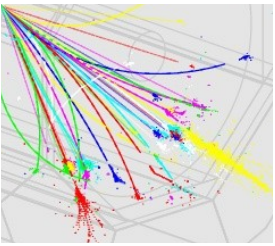
B field 91 GeV



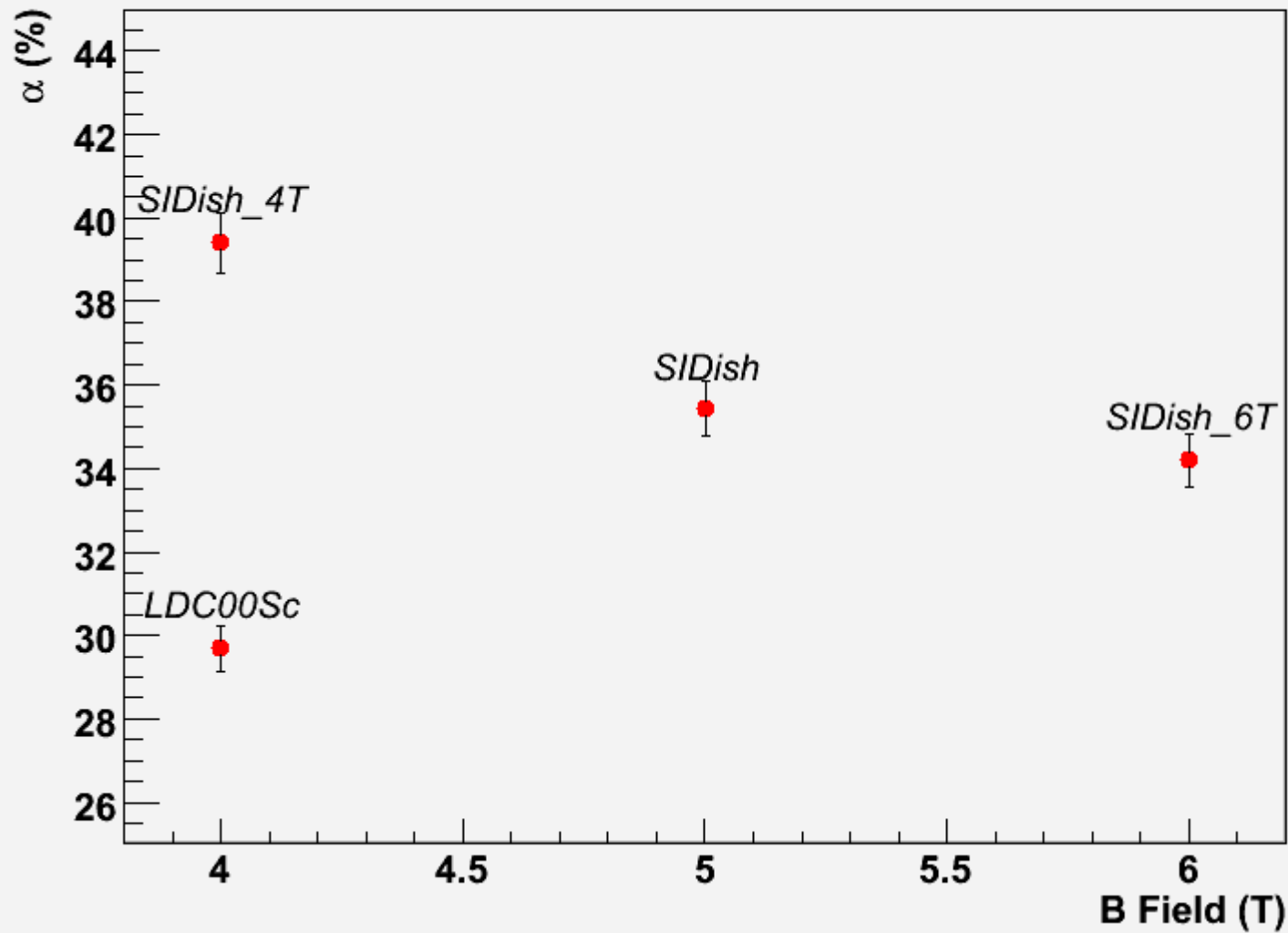
B Field dependence 91 GeV



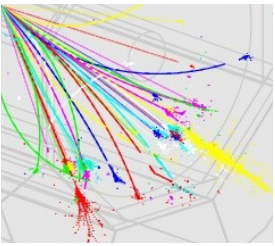
B Field 200 GeV



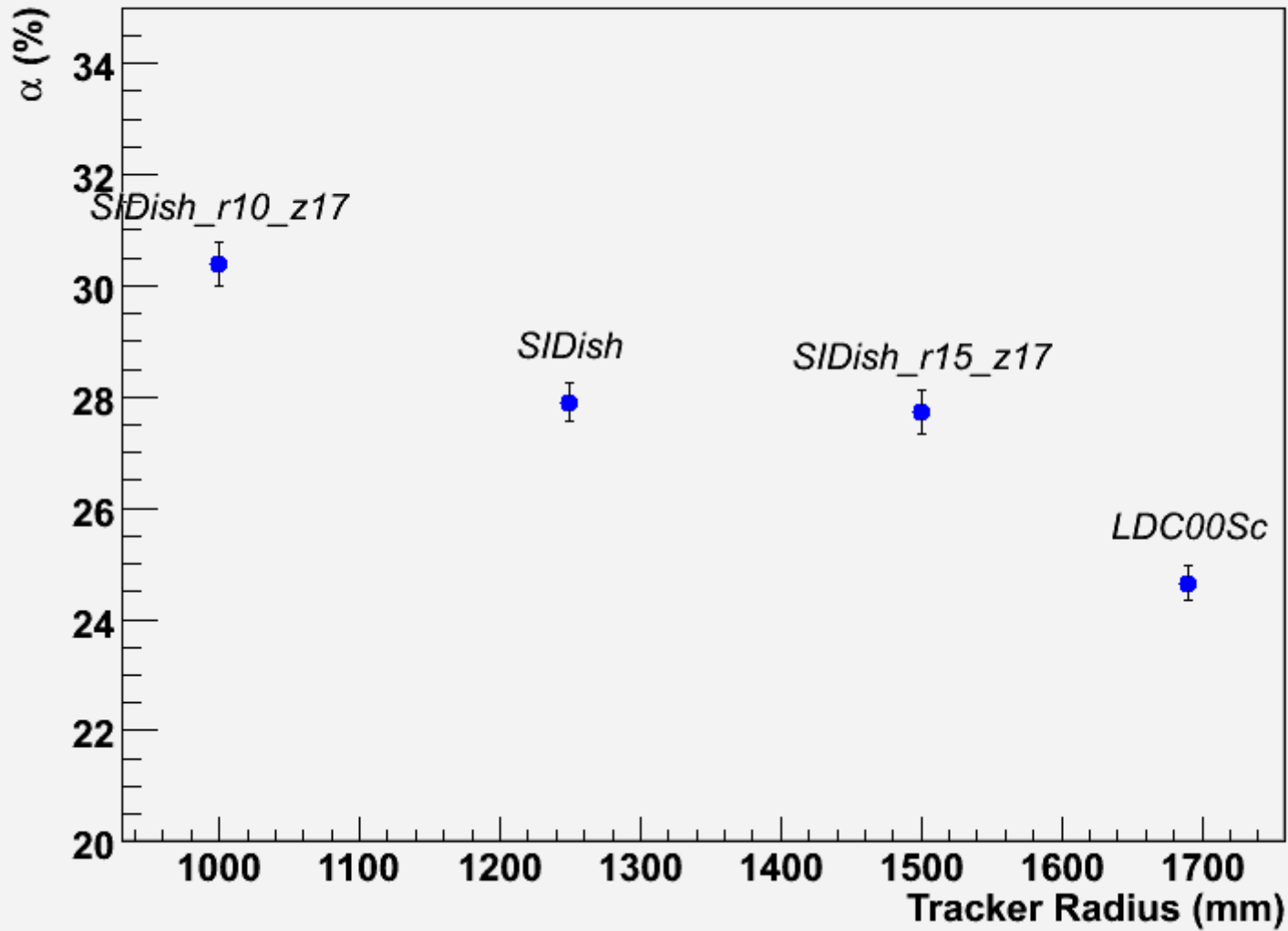
B Field dependence 200 GeV



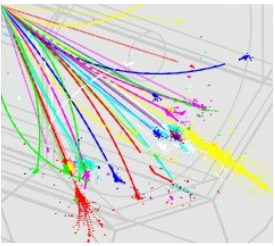
Radius 91 GeV



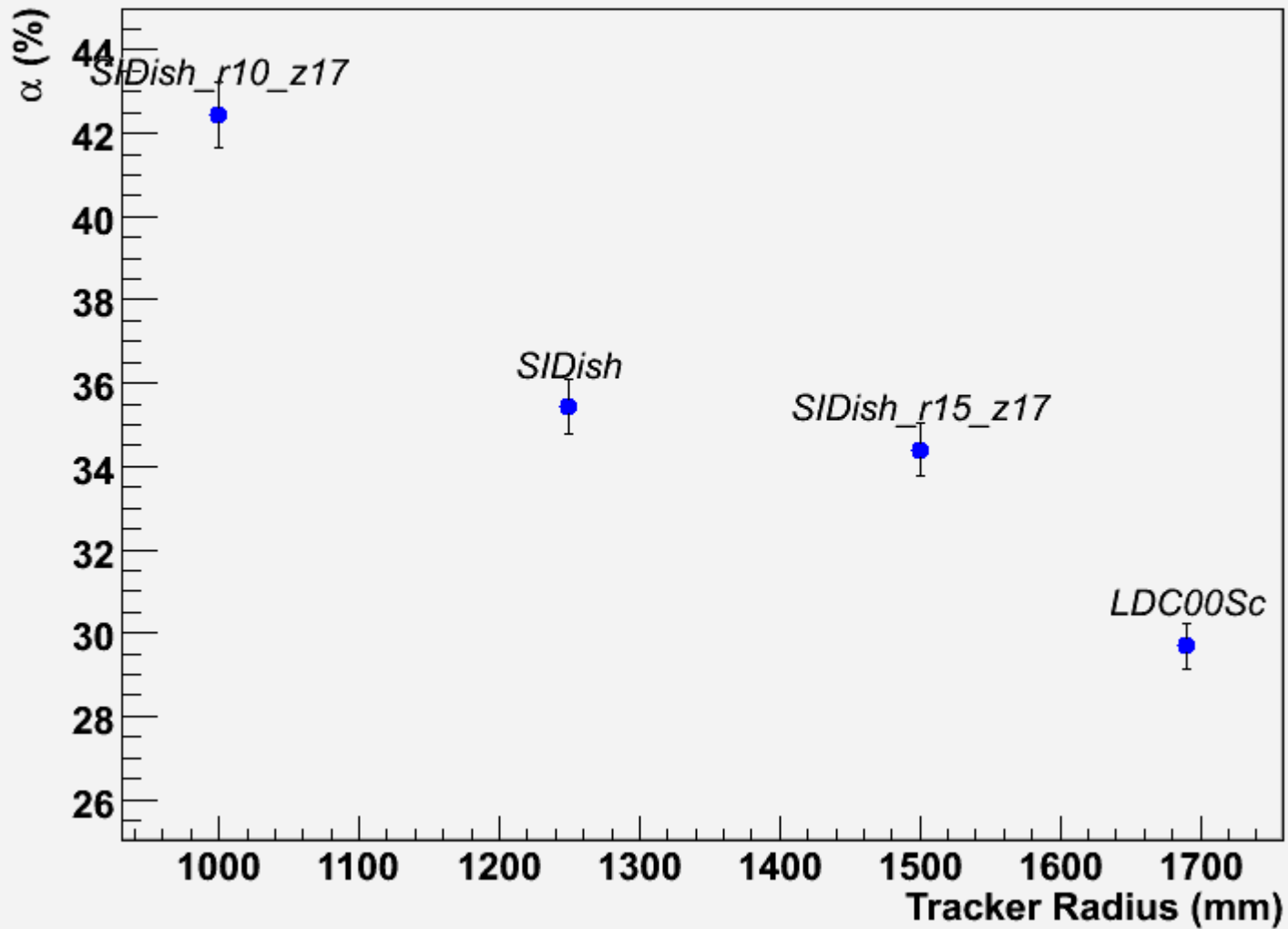
Radial Dependence 91 GeV



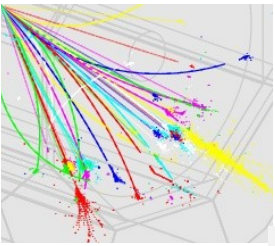
Radius 200 GeV



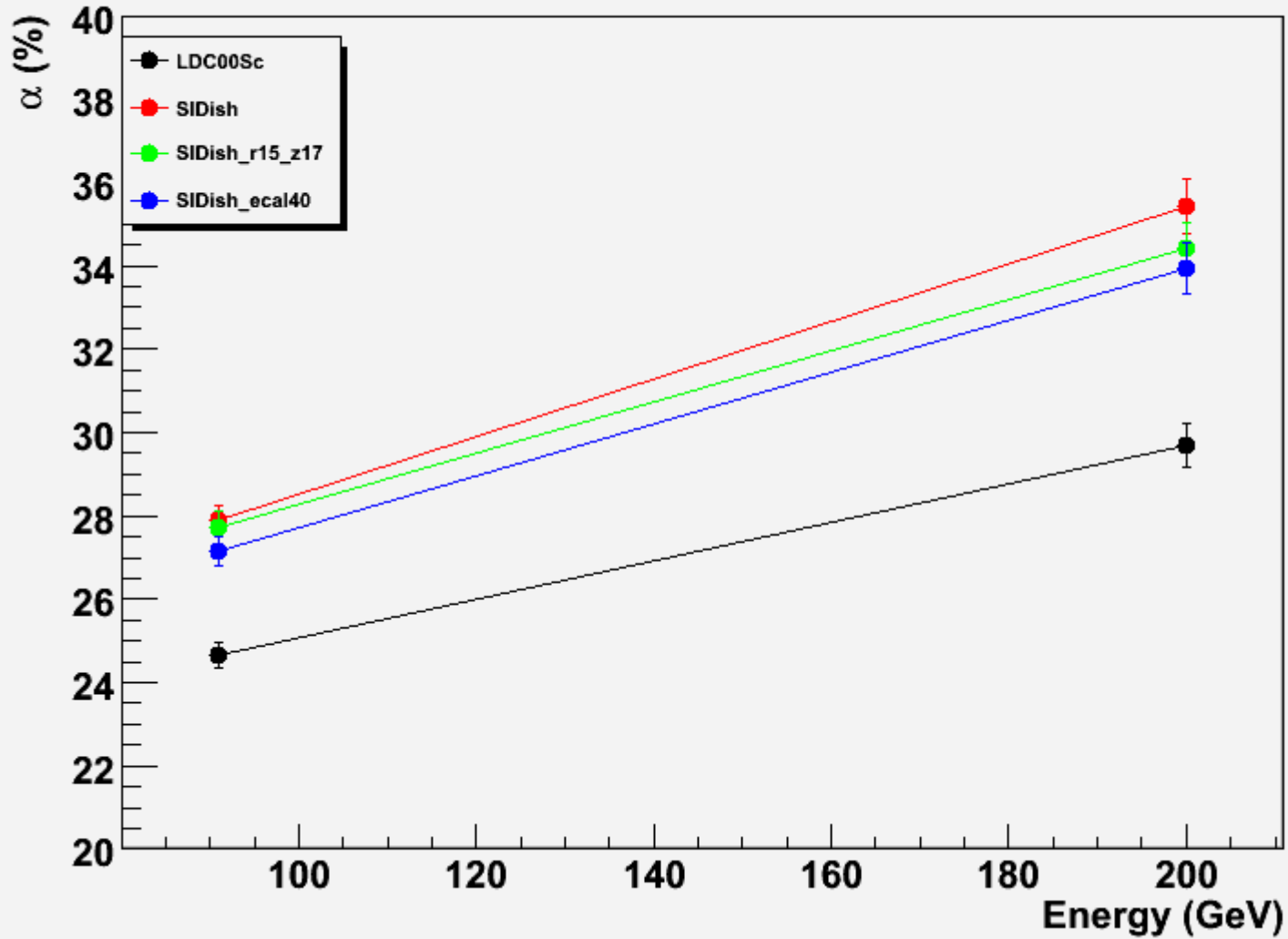
Radial Dependence 200 GeV

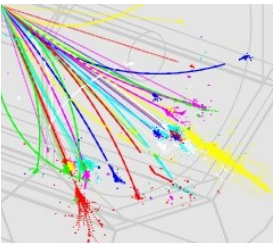


Energy Dependence



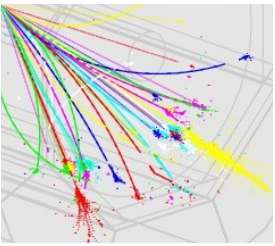
Energy dependence





That's it

- Will make some more plots for next Tuesday
- Next two slides are from Marty



LDC00Sc vs. SiD

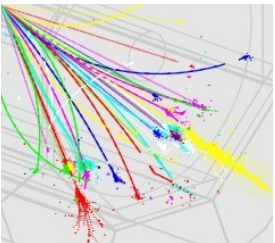
SiD Parametric Cost using some LDC00Sc Parameters

- Caveats: The SiD Parametric Costs were calculated assuming:
 1. $R_{Trkr}=1.69$ m, Tracker Z = 2.73 m (Si Tracker, not TPC)
 2. EMCal SiW 30 + 10 layers of 1.4 mm/4.2 mm +2.5 mm gaps (SiD Si+KPiX readout)
 3. HCal Fe 40 layers 18 mm +7.5 mm gap. (RPC's w KPiX readout, not scintillator)
 4. $B=4$ T
 5. The costs are base costs in 2007\$, and do not include indirects or escalation to a start date.
 6. The "LDC/SiD" ratio, 1.65, may have more validity than the absolute amounts.
 7. There are significant uncertainties in the unit costs of many components, including Si, W, and Fe!

M. Breidenbach



Comparison



LDC

Decription	M&S	M&S Cont	Labor	Labor Cont	Total
VXD	\$ 4,250,000	\$ 2,755,000	\$ 2,200,359	\$ 802,325	\$ 10,007,684
Tracker	\$ 22,873,484	\$ 8,280,719	\$ 10,895,928	\$ 4,249,955	\$ 46,300,086
EMCal	\$ 142,305,018	\$ 57,522,007	\$ 73,115,346	\$ 26,026,751	\$ 298,969,123
Hcal	\$ 24,082,534	\$ 12,541,267	\$ 33,302,400	\$ 12,092,920	\$ 82,019,121
BeamCal	\$ 1,980,000	\$ 828,000	\$ 1,270,400	\$ 419,280	\$ 4,497,680
Muon Sys	\$ 4,490,982	\$ 1,721,844	\$ 3,637,700	\$ 1,366,942	\$ 11,217,467
Electronics	\$ 3,908,400	\$ 1,304,600	\$ 12,013,830	\$ 3,723,001	\$ 20,949,831
Magnet	\$ 139,194,440	\$ 47,887,679	\$ 5,642,201	\$ 1,920,276	\$ 194,644,596
Installation	\$ 2,617,800	\$ 522,320	\$ 4,746,050	\$ 1,677,383	\$ 9,563,553
Management	\$ 921,000	\$ 171,700	\$ 6,780,700	\$ 1,495,295	\$ 9,368,695
	\$ 346.6	\$ 133.5	\$ 153.6	\$ 53.8	\$ 687.5

SiD

Decription	M&S	M&S Cont	Labor	Labor Cont	Total
VXD	\$ 4,250,000	\$ 2,755,000	\$ 2,200,359	\$ 802,325	\$ 10,007,684
Tracker	\$ 13,849,190	\$ 5,122,216	\$ 8,766,447	\$ 3,504,637	\$ 31,242,490
EMCal	\$ 56,993,439	\$ 23,397,376	\$ 30,946,837	\$ 11,267,773	\$ 122,605,425
Hcal	\$ 12,088,549	\$ 6,544,275	\$ 19,656,577	\$ 7,316,882	\$ 45,606,283
BeamCal	\$ 1,980,000	\$ 828,000	\$ 1,270,400	\$ 419,280	\$ 4,497,680
Muon Sys	\$ 3,526,780	\$ 1,384,373	\$ 3,177,101	\$ 1,205,732	\$ 9,293,986
Electronics	\$ 3,908,400	\$ 1,304,600	\$ 12,013,830	\$ 3,723,001	\$ 20,949,831
Magnet	\$ 108,931,656	\$ 37,295,705	\$ 5,642,201	\$ 1,920,276	\$ 153,789,838
Installation	\$ 2,617,800	\$ 522,320	\$ 4,746,050	\$ 1,677,383	\$ 9,563,553
Management	\$ 921,000	\$ 171,700	\$ 6,780,700	\$ 1,495,295	\$ 9,368,695
	\$ 209.1	\$ 79.3	\$ 95.2	\$ 33.3	\$ 416.9

M. Breidenbach

