

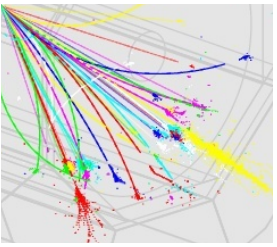
# CALICE Meeting

RAL 17.09.2007

M. Stanitzki

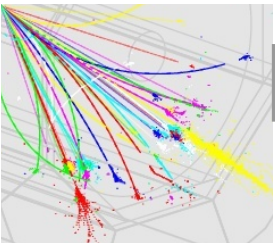


# What is on today ?



- Laser <-> DAQ communication
- Tungsten purchases (cont'd)
- Particle Flow
- News from SiD

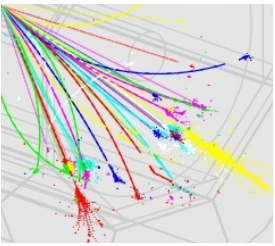




# Laser-DAQ communication

- Fixed the processing issues
  - Learned a lot of things about LabView i didn't want to know
- Reading out variables works nicely
  - GetConfigurationData
  - GetRunData
  - Acknowledge Message
- Writing variables is getting there
  - Again handling events right is the key ...
  - it works on the testbench
  - I need to implement it in the real program
- Updated Specs-> Paul should put them on the webpages

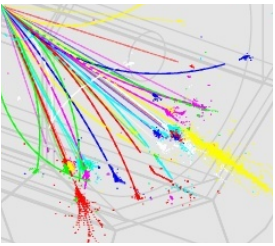




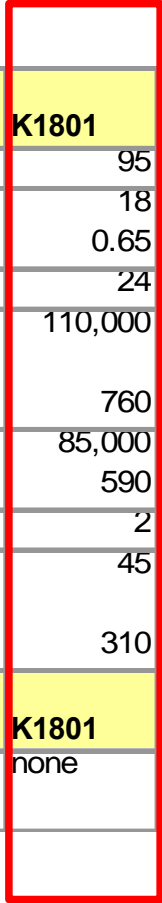
# Tungsten

- I still need the mechanical specs !

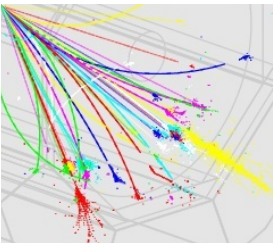
# Tungsten Alloys



ALLOY DESIGNATION		K1700	K1701	K1750	K1800	K1801	K1850
<b>Tungsten</b>	(%)	90	90	92.5	95	95	97
<b>Density</b>	(g/cm <sup>3</sup> )	17	17	17.5	18	18	18.5
	(lb/in <sup>3</sup> )	0.61	0.61	0.63	0.65	0.65	0.67
<b>Hardness</b>	(Rc)	23	22	24	25	24	26
<b>Ultimate Tensile Str.</b>	(psi)	125,000	110,000	125,000	125,000	110,000	120,000
	(N/mm <sup>2</sup> )	860	760	860	860	760	830
<b>Yield Strength</b>	(psi)	80,000	90,000	90,000	90,000	85,000	95,000
	(N/mm <sup>2</sup> )	590	550	620	620	590	660
<b>Elongation</b>	(% in1in.)	12	4	10	8	2	6
<b>Modulus of Elasticity</b>	(psi x 10)	45	40	46	48	45	50
	(kN/mm <sup>2</sup> )	310	280	320	330	310	345
ALLOY DESIGNATION		K1700	K1701	K1750	K1800	K1801	K1850
<b>Magnetic Properties</b>		slight	none	slight	slight	none	slight

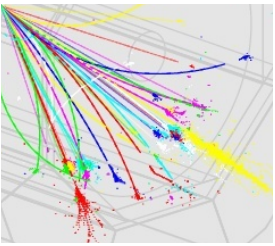


# Scaling Detectors



- Figured out a lot of new things
  - latest Mokka-HEAD can write out sensible GearFiles
  - makes life a lot easier
- Works with LDC00Sc
- Should work for LDC01Sc

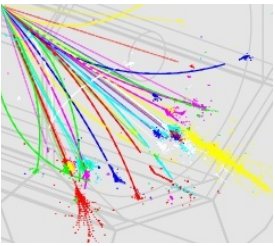




# Some oddities

- Weird B-Field dependence (seen last time)
  - My resolution decreases with higher B-Field
  - Mark : Too many curly tracks at the Z, maybe ...
  - Solution: the track-cheater also needs to explicitly know the B field, although it is written in the GEAR
- Made a run with default LDC00Sc
  - LDC00Sc : 30.4 % (Mark 29.8 %)
  - LDC00Sc with 5 T field: 31.1 %
- Still a slight degradation, but consistent with a few curly tracks





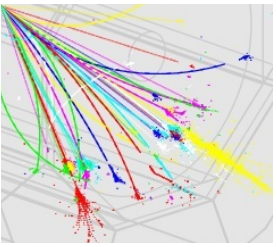
# A Sid-ish Detector

- Scale LDC00Sc down in r and Z and increase field
  - SiD 4T 32.6%
  - SiD 5T 32.0%
  - SiD 6T 33.8 %
- Probably we can do better by calibrating for each point separately. Effects of  $\sim 0.5\%$ - $1\%$
- Basically all tools are in place ...
- This effort is manpower limited
  - So I could use a hand here



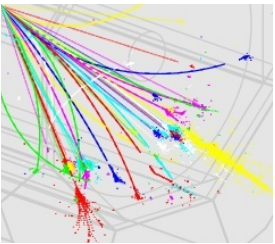


# Open Questions



- Can we run MAPS with LDC00?
- Are the MAPS in the official release yet ?
- 

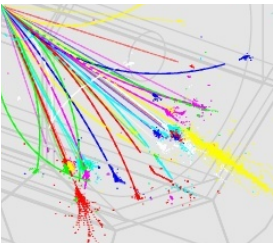




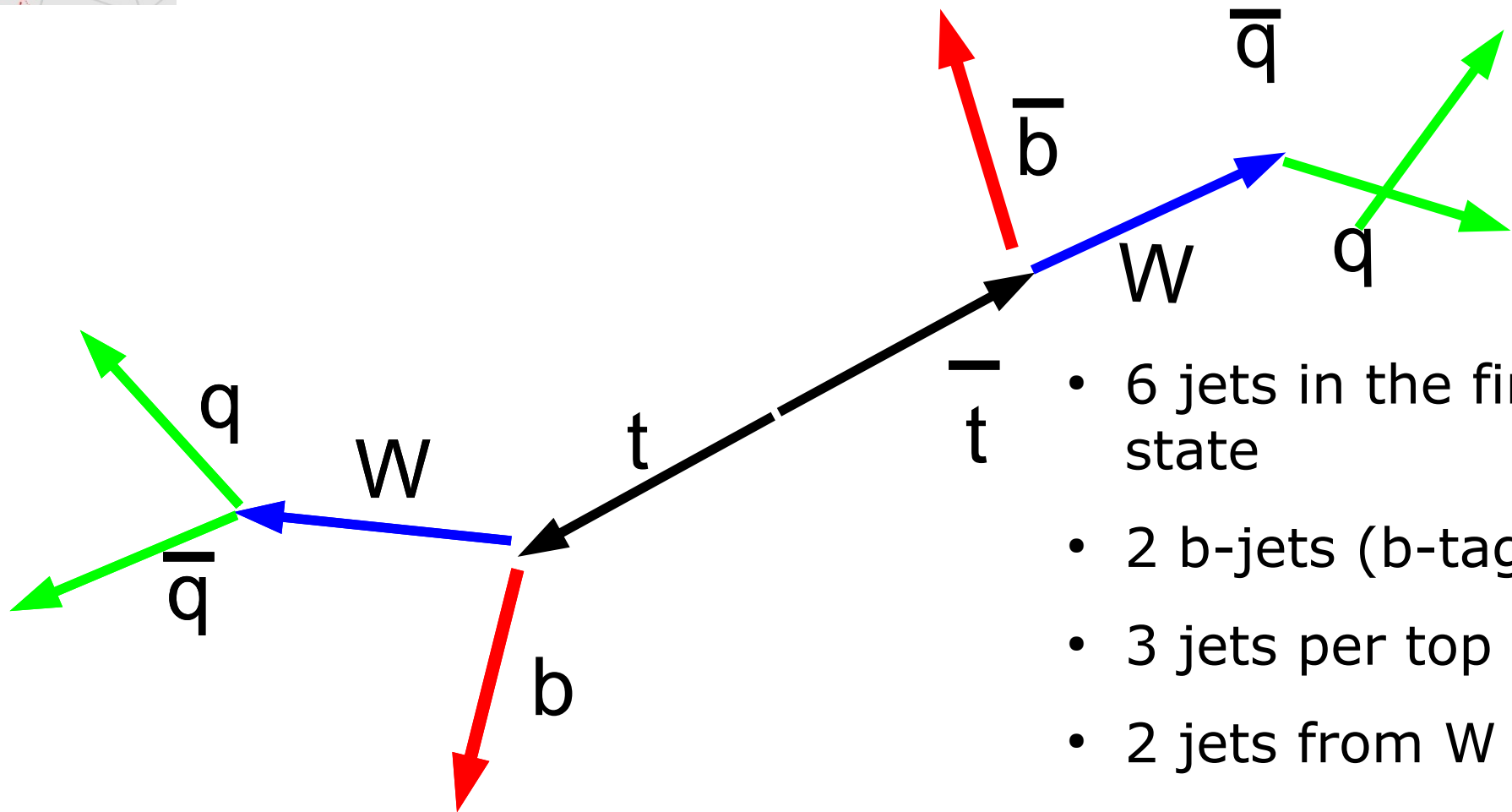
# Some go at ttbar

- Exercise the entire chain
  - MAPS Digi package
  - Pandora
  - Jet Cluster
- Build Analysis on LCIO reconstructed objects
  - proof of principle (it can be done)
  - prototype analysis (lots of things not optimal)
- ttbar channel is a RAL group effort (Steve, Kristian, Konstantin, Talini, Mike, Giulio, Marcel)



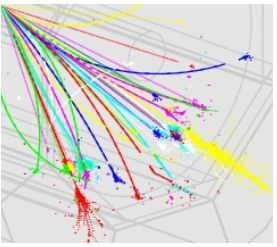


# The all-hadronic channel



- 6 jets in the final state
- 2 b-jets (b-tag!)
- 3 jets per top !
- 2 jets from  $W$

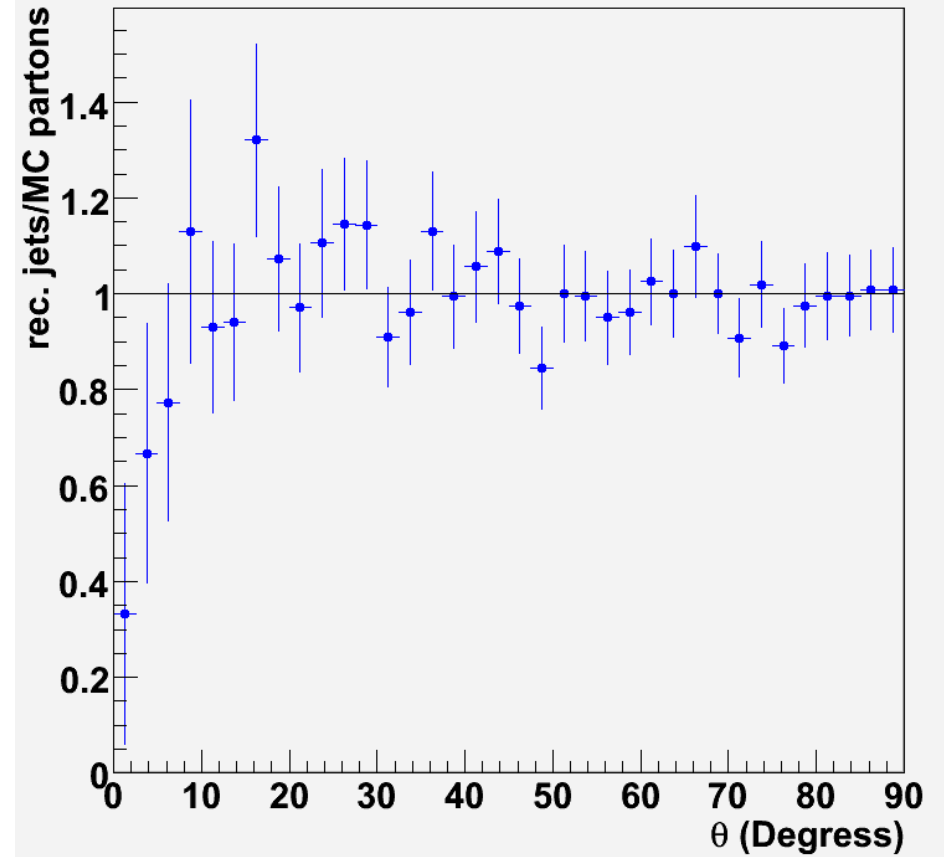
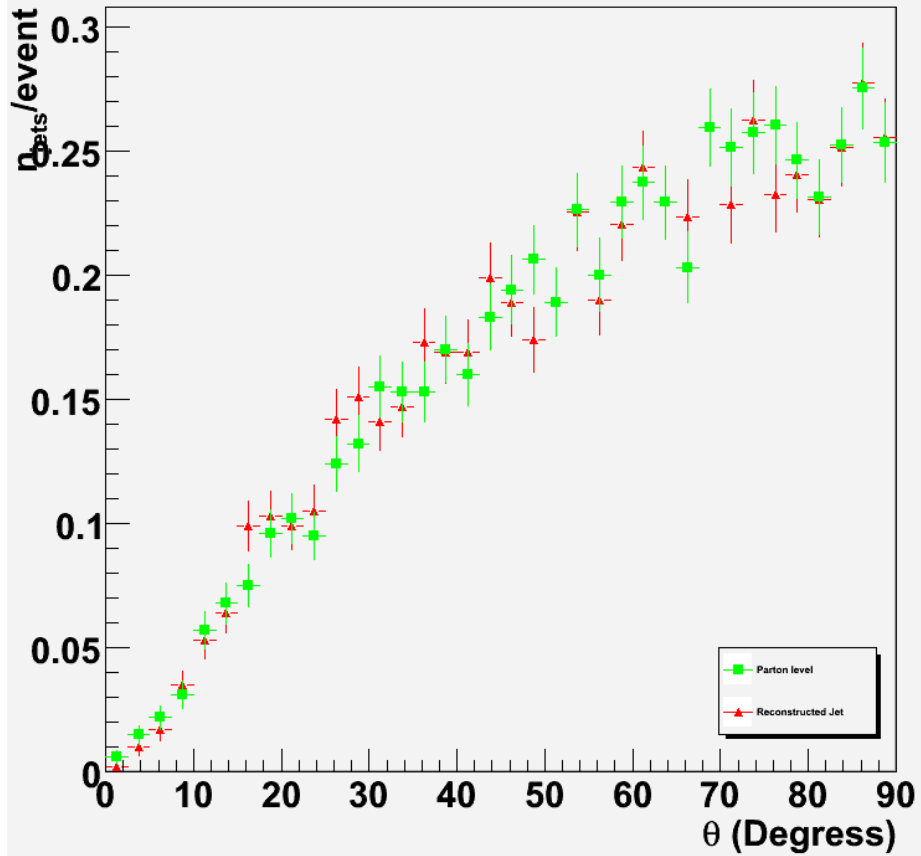
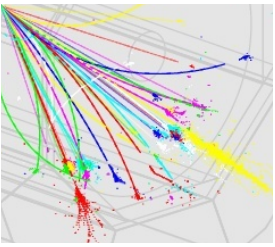
# Ingredients so far



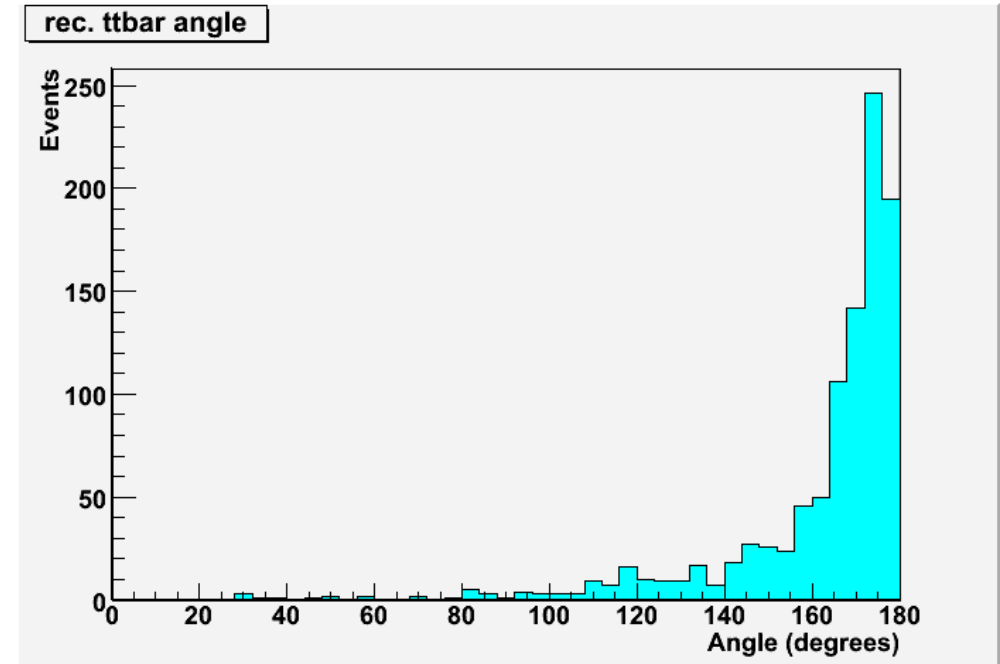
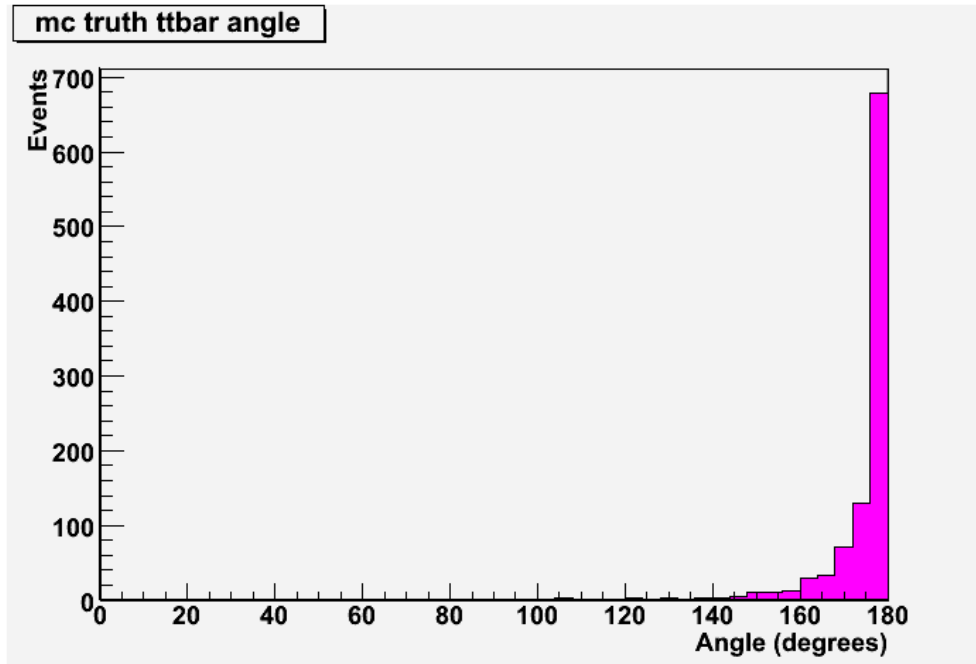
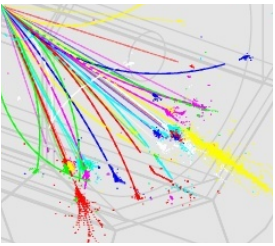
- PandoraPFA
- Jet-Clustering 6 Jets
- CDF KinFitter from the GZZ package
- To come:
  - B-tagging
  - backgrounds
  - More statistics
  - doing the same with org.lcsim



# Jet Reco efficiency



# Reconstructed Tops



- Not doing a bad job
- Could do better
  - base pairing not only on  $\chi^2$
  - use b-tagging in pairing... Kristian is working on this

