Electron ID

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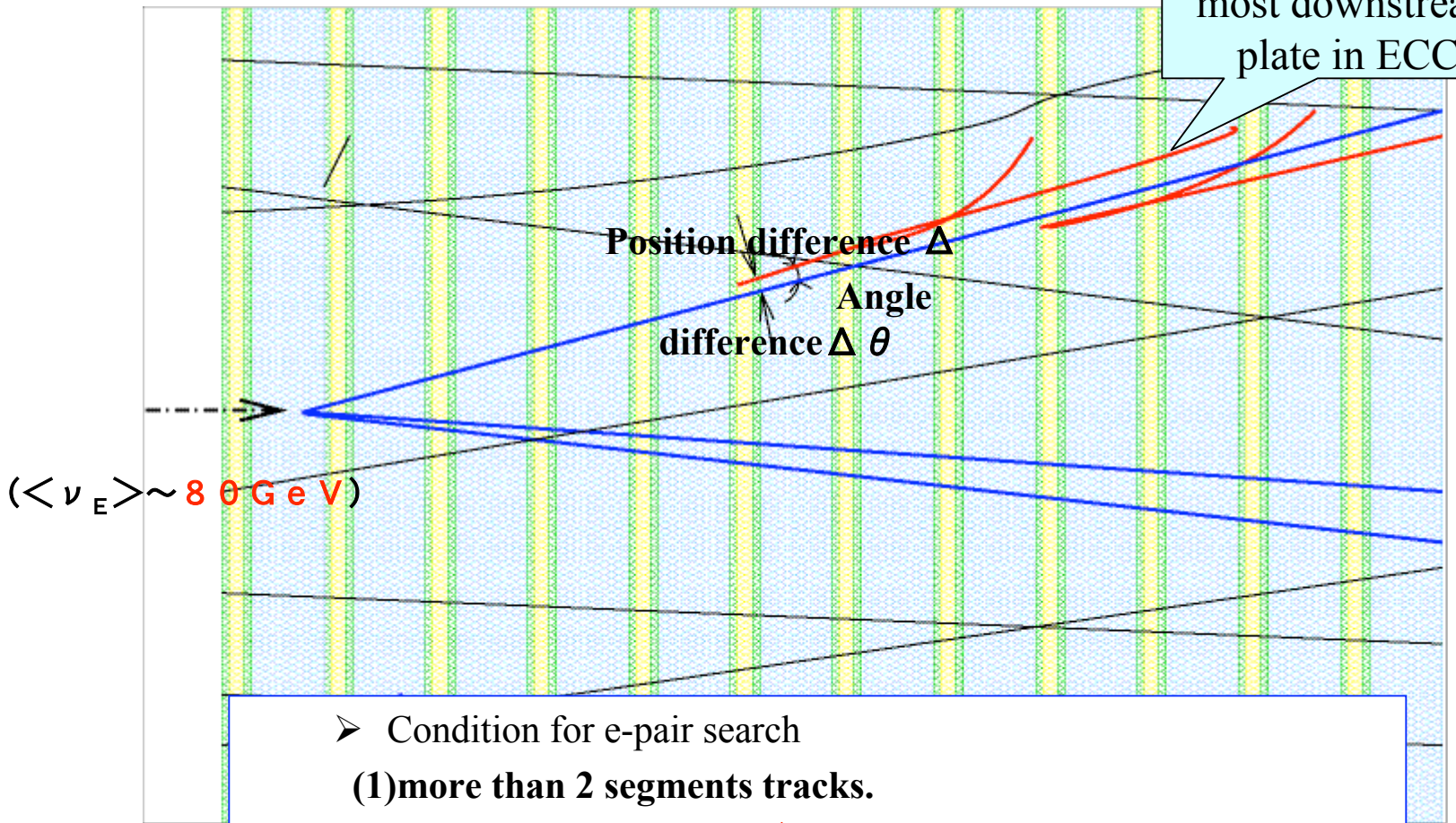
Electron ID in ECC



- Condition for e-pair search

(1)more than 2 segments tracks.

(2)position difference Δ<30 μm

(3)Angle difference Δ θ<20mrad

Status of electron ID

- Number of located events ・・・404 events
- Number of 1ry tracks ・・・1681 tracks

[～March/2003]

- Number of analyzed events ・・・ 330 events (1122 tracks)

→ ***52 events*** were identified as ν_e^{CC}

[Now]

Number of analyzed events ・・・170events (553 tracks)

* <u>with 1ry μ :152events</u>

no 1ry μ :18 events

4events (6 tracks) have not yet analyzed

Result of selection

ECC	# of 1ry tracks	# of Events (# of no 1ry μ events)	# of selected e-pair candidates
1	124	31(1)	14
2	108	34(1)	10
3	52	21(6)	6
4	52	17(1)	13
5	61	18(1)	3
7	109	34(4)	9
8	47	15(4)	2
	553trks	170ev	57tracks

Result of confirmation

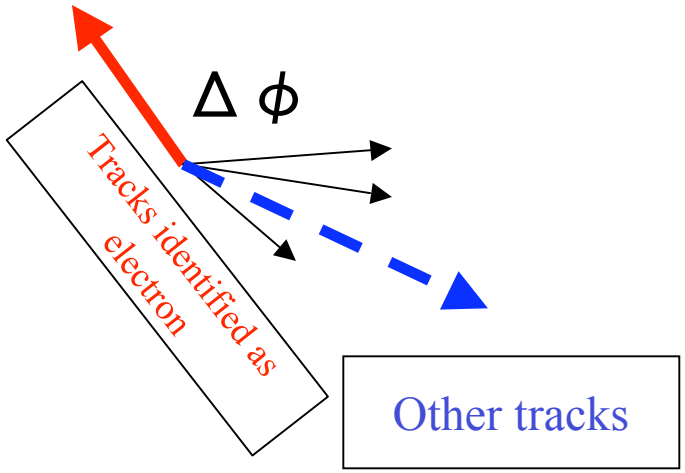
- **57 tracks**

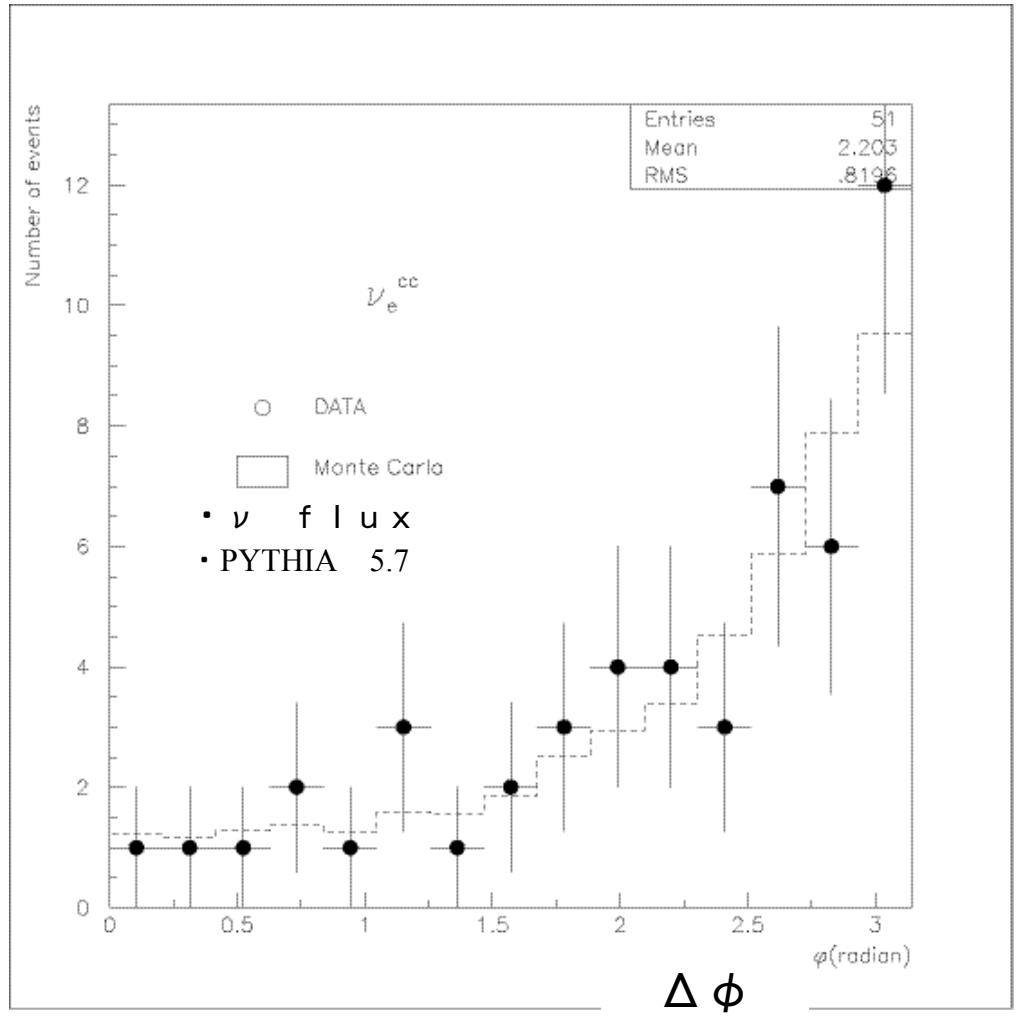
cascade shower electron	**3 trks**	**Primary electron**	**2**
other penetrating tracks	**48**	**Pi0**	
1			
other 1ry tracks	**3**		
cosmic ray	**3**		

Result of electron search

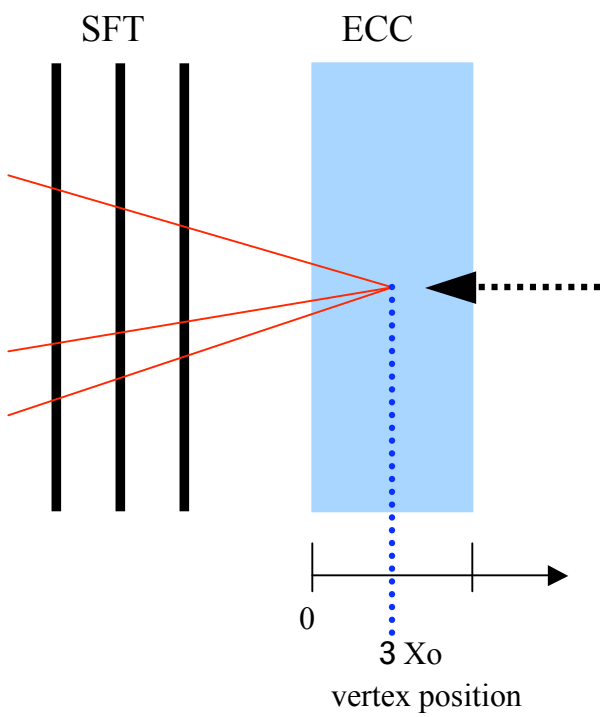
- 400 events (1675 tracks) have been analyzed for electron ID.
- 54 tracks have been identified as electron.
- Number of observed ν_e^{CC} is 54 events.
- In ν_μ^{CC}, no electron tracks have not been detected.

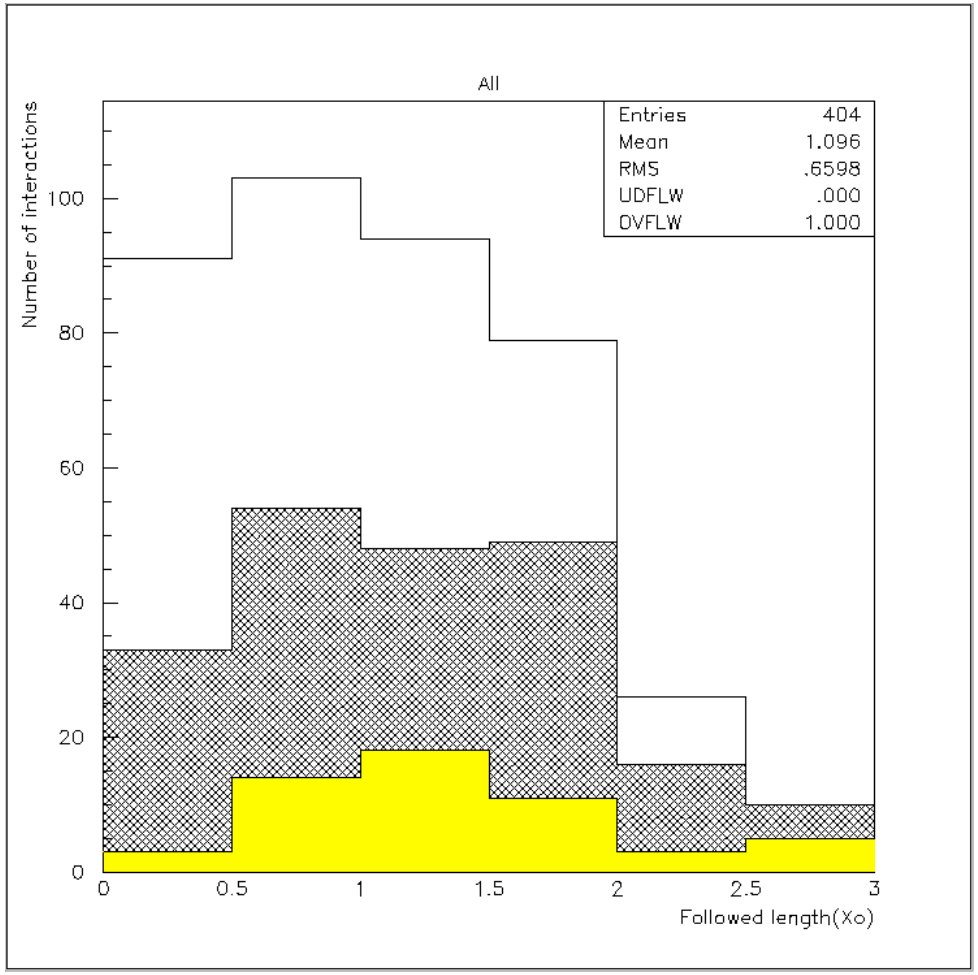
Δ φ distribution



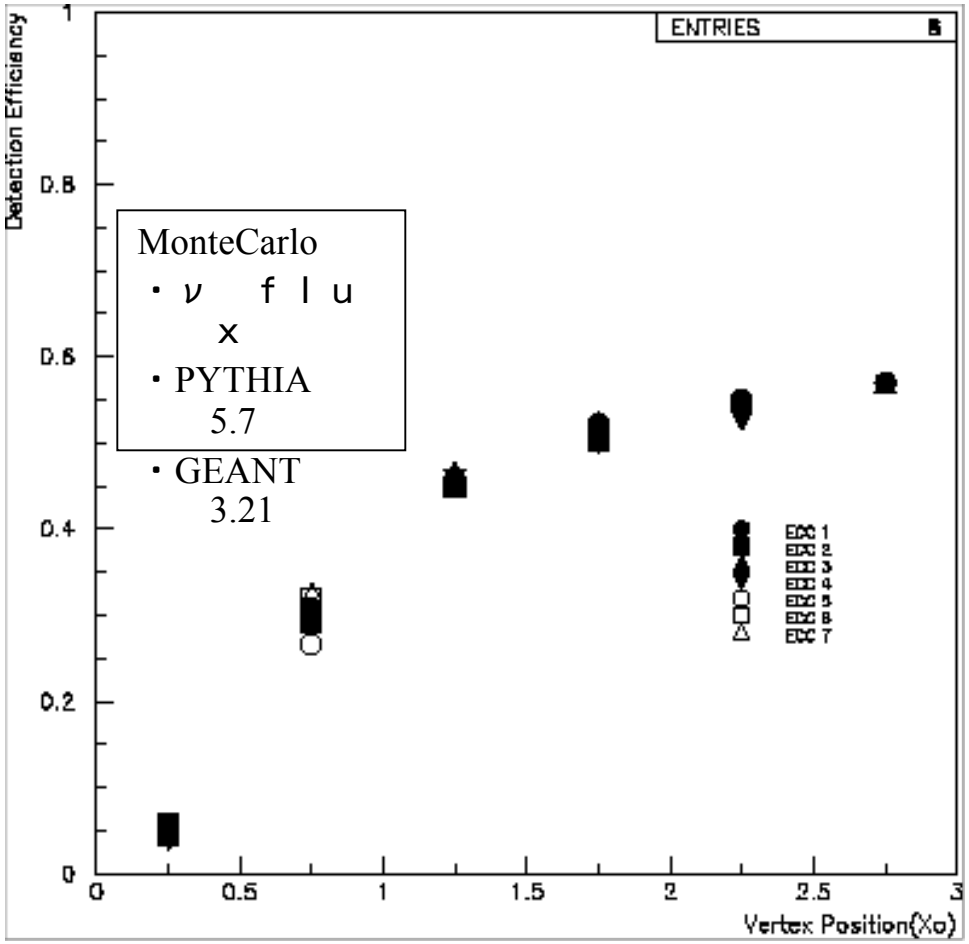


Vertex position distribution





Detection efficiency (Monte Carlo)



---Result---

50% @1.5Xo

57% @3.0Xo

Result（νe^{CC}: $\nu \mu^{CC}$: ν^{NC}）

✧ Downstream Events (197events)

	νe^{CC}	$\nu \mu^{CC}$	ν^{NC}
Observed Number	32	70	95
Corrected Number	85	87	25
ratio	0.43±0.08	0.44±0.08	0.13±0.10

✧ Upstream Events（106 events)

	νe^{CC}	$\nu \mu^{CC}$	ν^{NC}
Observed Number	14	51	41
Corrected Number	26	63	17
ratio	0.25±0.10	0.59±0.12	0.16±0.14

Predicted νFlux

νe^{CC}: $\nu \mu^{CC}$: ν^{NC}

=0.375:0.375:0.25

From now…

- For more high detection efficiency, condition of epair search will be changed.
- The estimated detection efficiency should be confirmed by other test experiment.
- (SLAC 50 GeV/c, ECC200(IRON))