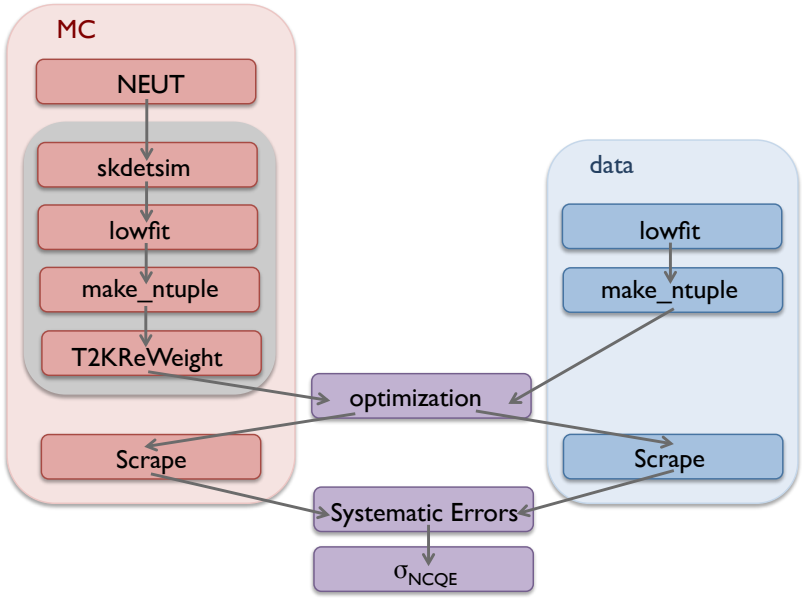
ncgamma analysis tools



- understanding SelectNCGamma_data.py histograms

Corina Nantais
Group meeting
13 April 2017

ncgammahistRun4.root

- confirmed 59 candidate events

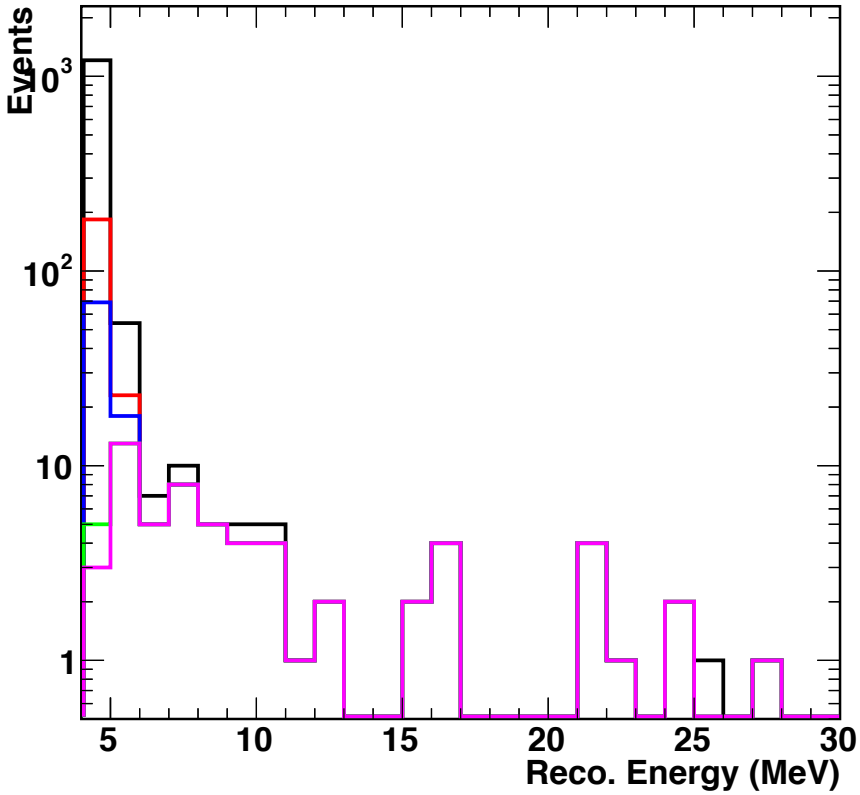
cut	**number of entries**
dt0 (on-timing)	1313
wallfv	250
dwall	250
effwall	130
ovaq	61
angle	59
mpeak (pre-activity)	59

erec

reconstructed energy

T2K Run 4 data, cuts made in following order: erec, on-timing, dwall, effwall, ovaq, angle (final)

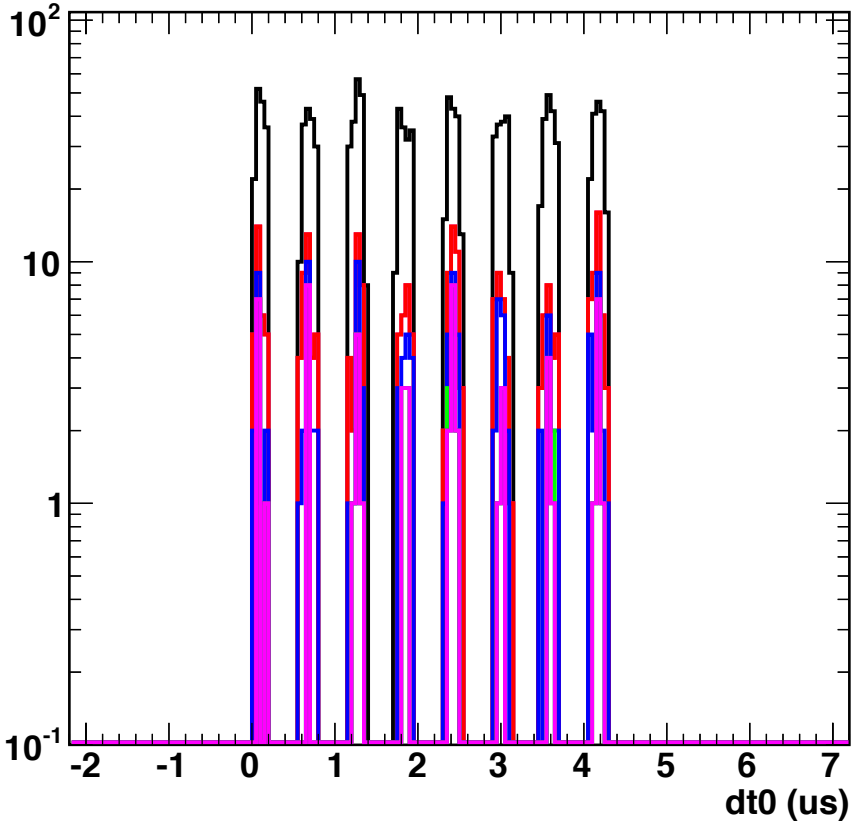
ontiming
wallfv (& dwall)
effwall
ovaq
mpeak (& angle)



dt0

on-timing, ±100 ns from beam centre

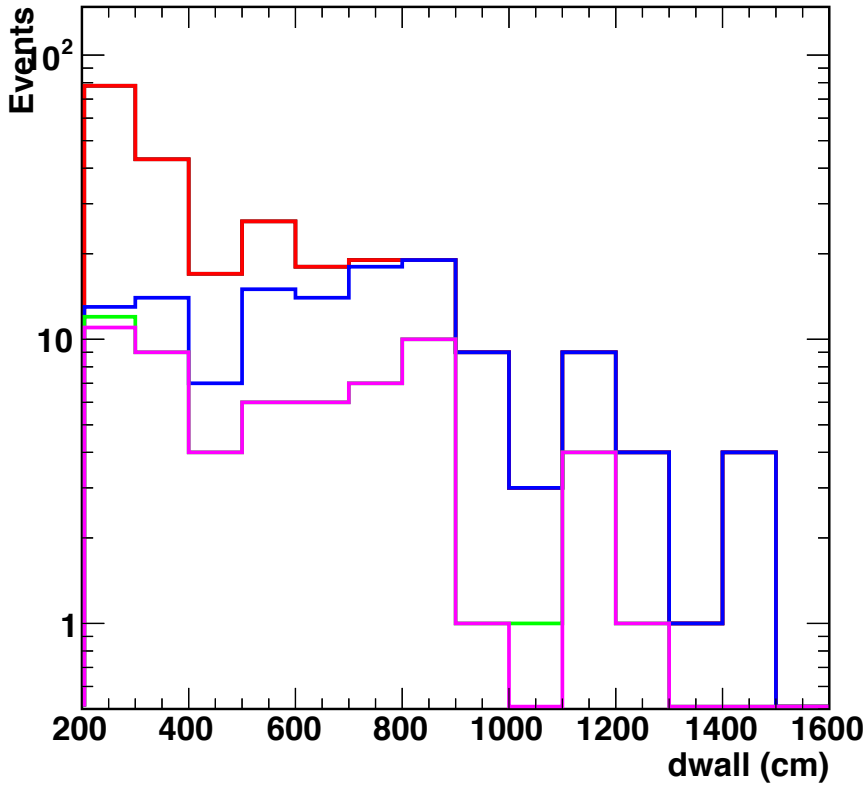
ontiming
wallfv (& dwall)
effwall
ovaq
mpeak (& angle)



dwall

distance from reconstructed vertex to nearest ID wall
> 200 cm

ontiming
wallfv (& dwall)
effwall
ovaq
mpeak (& angle)

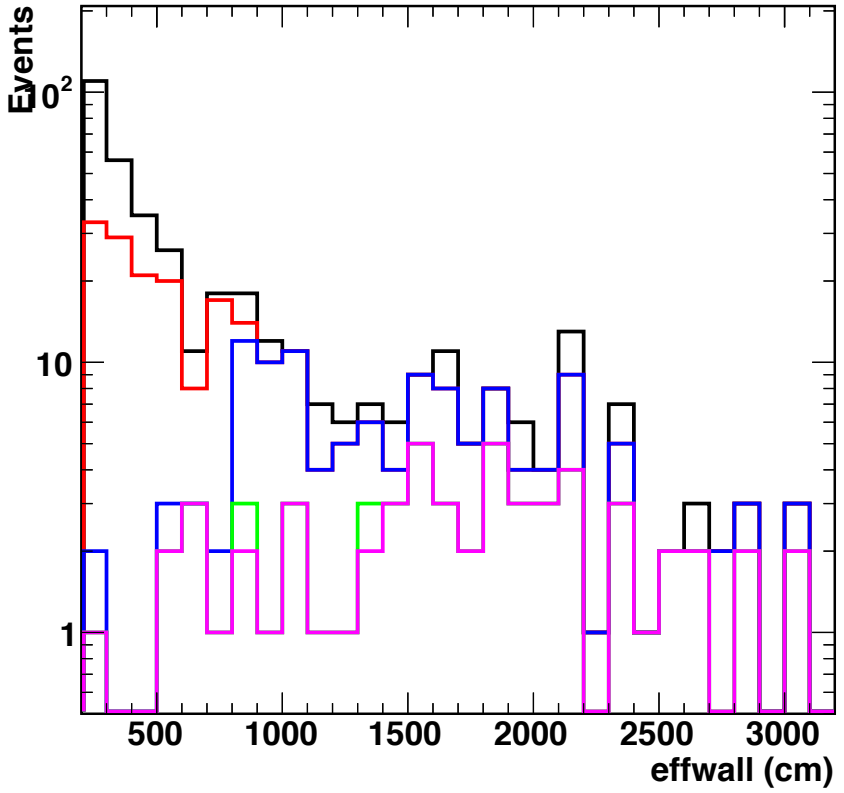


effwall

distance from reconstructed vertex backward along reconstructed direction to ID wall

>200 and y = 2200 – 328 x

ontiming
wallfv (& dwall)
effwall
ovaq
mpeak (& angle)

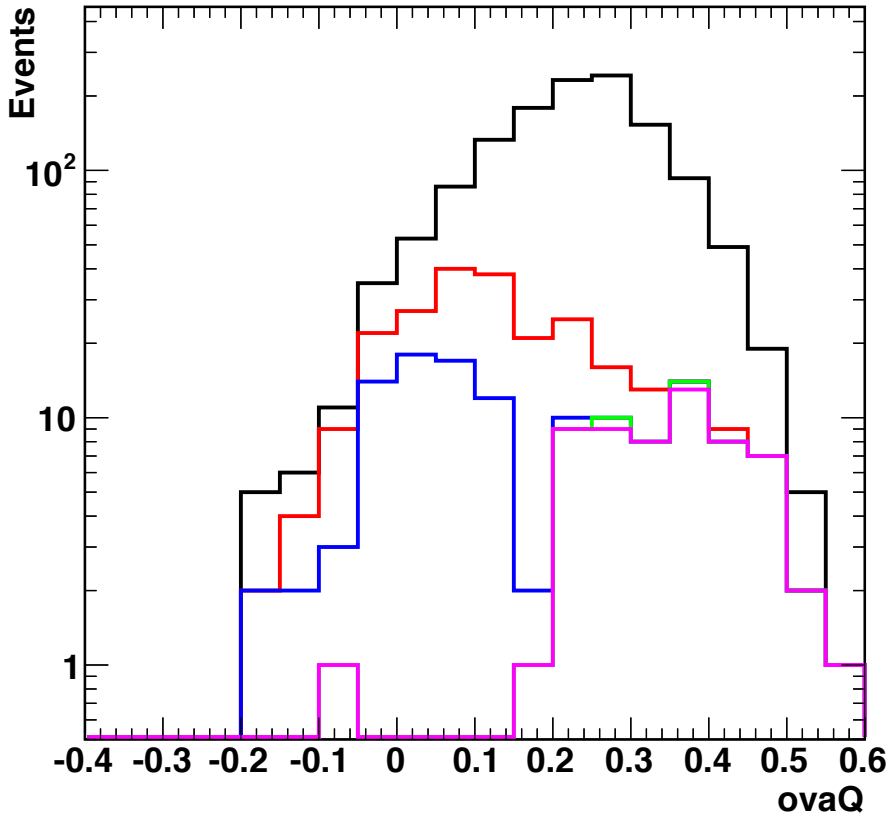


ovaq

reconstruction quality, depends on vertex and direction

$y = 0.4095 - 0.046\,x$

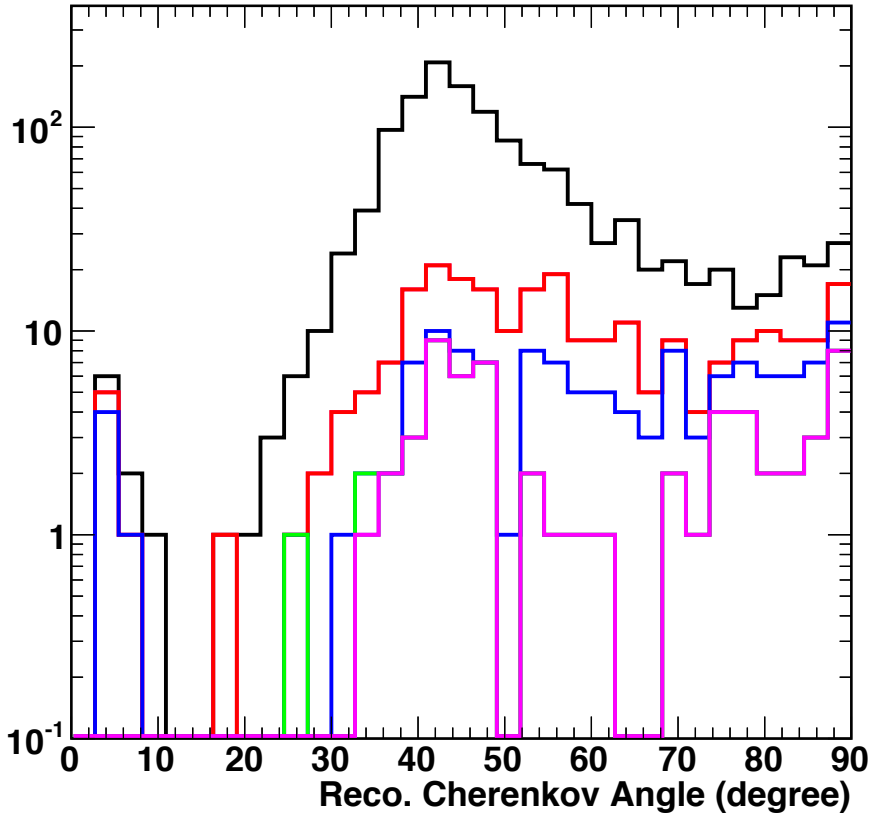
ontiming
wallfv (& dwall)
effwall
ovaq
mpeak (& angle)



angle

most common value from each combination of 3 hit PMT
>34°

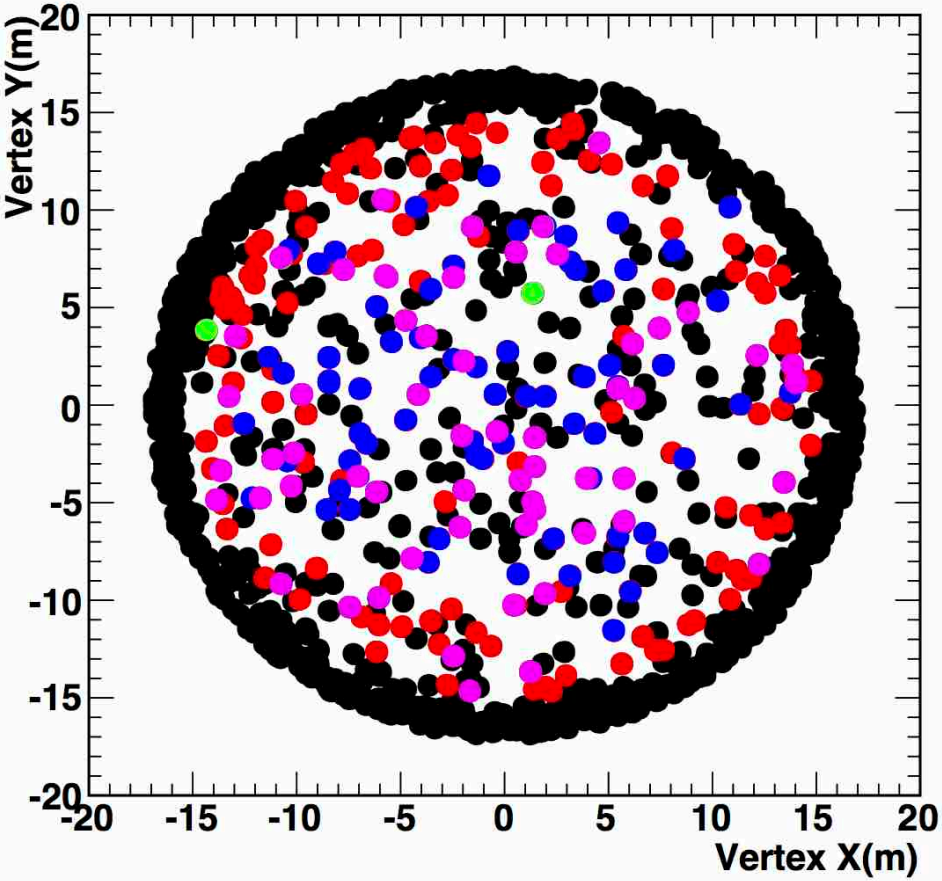
ontiming
wallfv (& dwall)
effwall
ovaq
mpeak (& angle)



vxy

reconstructed vertex

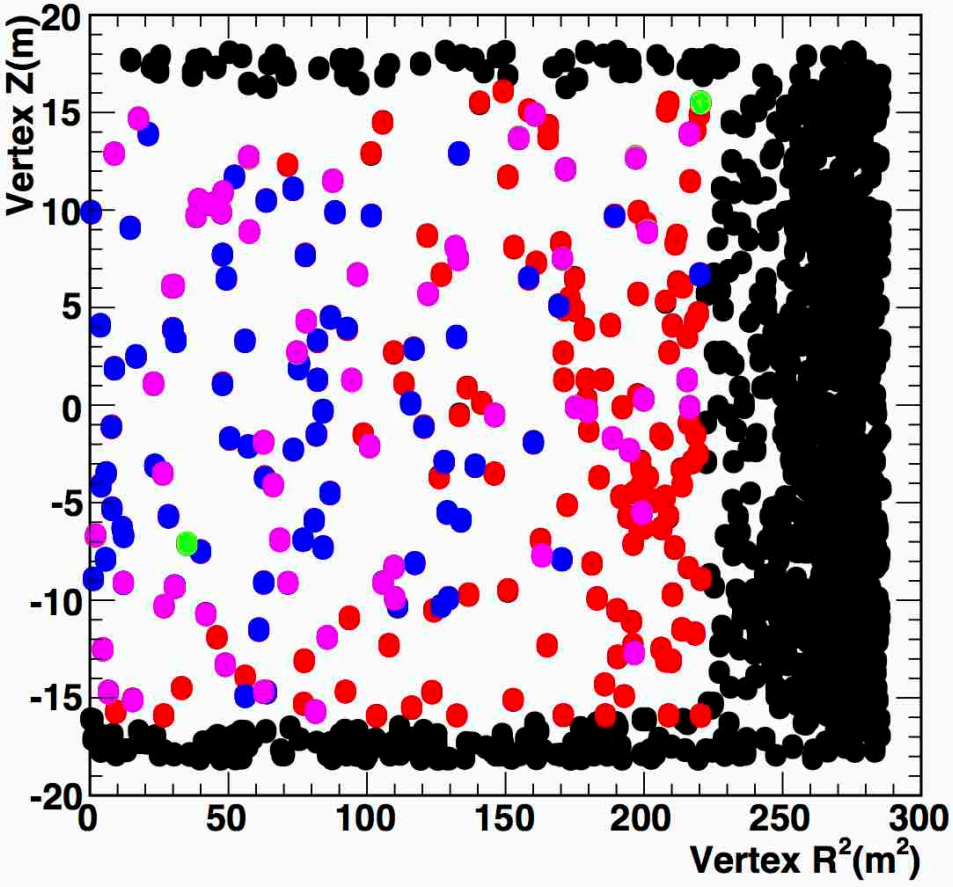
ontiming
wallfv (& dwall)
effwall
ovaq
mpeak (& angle)



r2z

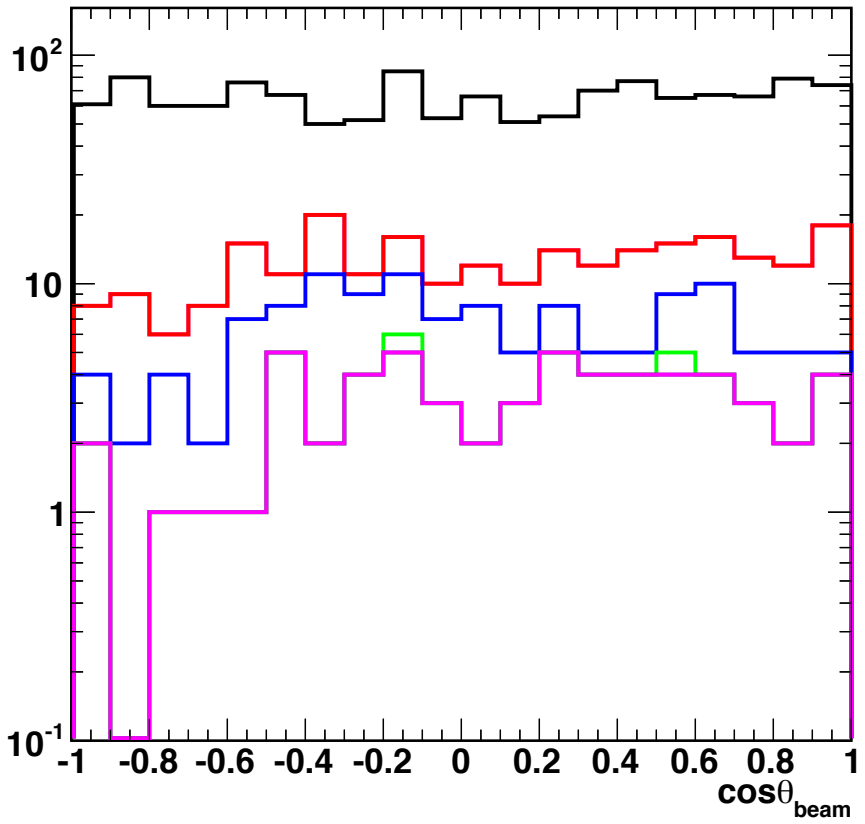
reconstructed vertex

ontiming
wallfv (& dwall)
effwall
ovaq
mpeak (& angle)



cosb

ontiming
wallfv (& dwall)
effwall
ovaq
mpeak (& angle)



resdt0

on-timing distribution

ontiming
wallfv (& dwall)
effwall
ovaq
mpeak (& angle)