

Asimov comparisons with different dcp values

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Overview

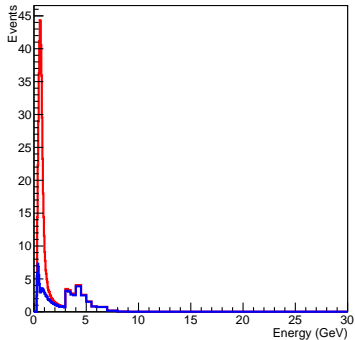
- ▶ Asked to study three new Asimov points by OA
- ▶ All based on point 1/A but with different values of dcp (see below)
- ▶ Energy spectra and woRC Asimov contours generated for each point

Set	A	C	D	E
$\sin^2(\theta_{12})$	0.304			
$\sin^2(\theta_{13})$	0.0217			
$\sin^2(\theta_{23})$	0.528			
Δm_{12}^2	7.35e-05			
Δm_{23}^2	0.002509			
δ_{CP}	-1.601	0	π	$\frac{\pi}{2}$

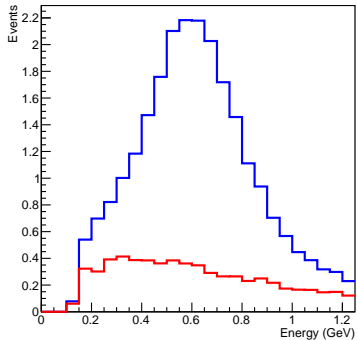
Energy spectra - Asimov C ($\delta_{CP} = 0$)

unoscillated
oscillated

SuperK Reconstructed ν_μ Energy



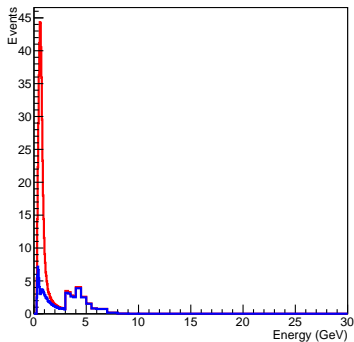
SuperK Reconstructed ν_e Energy



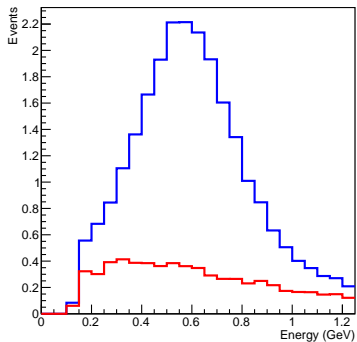
Energy spectra - Asimov D ($\delta_{CP} = \pi$)

unoscillated
oscillated

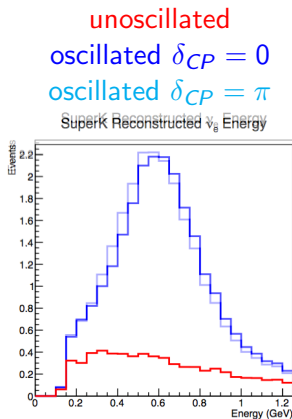
SuperK Reconstructed ν_μ Energy



SuperK Reconstructed ν_e Energy

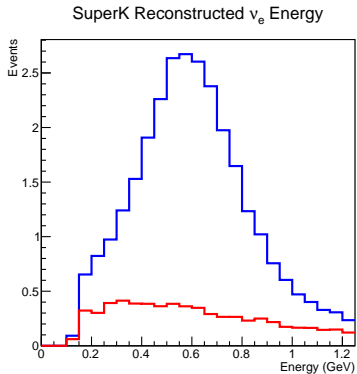
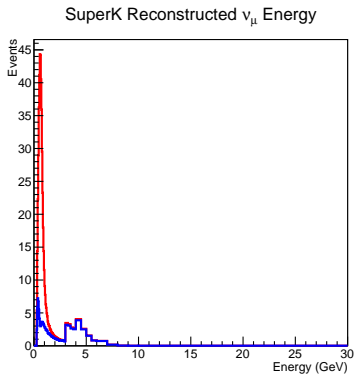


Energy spectra - CP conserving (C and D)



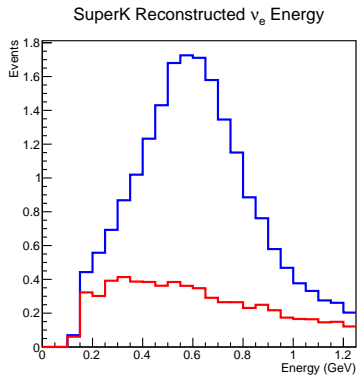
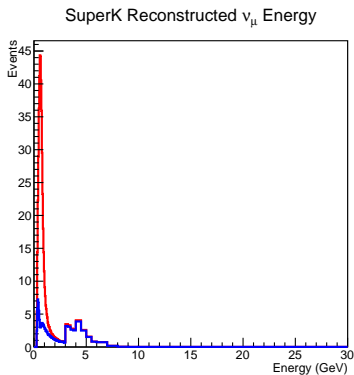
Energy spectra - Asimov A ($\delta_{CP} = -1.601$)

unoscillated
oscillated

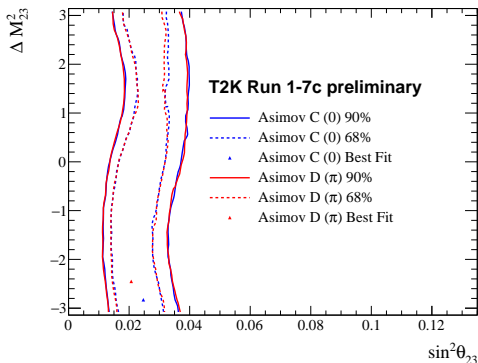


Energy spectra - Asimov E ($\delta_{CP} = \frac{\pi}{2}$)

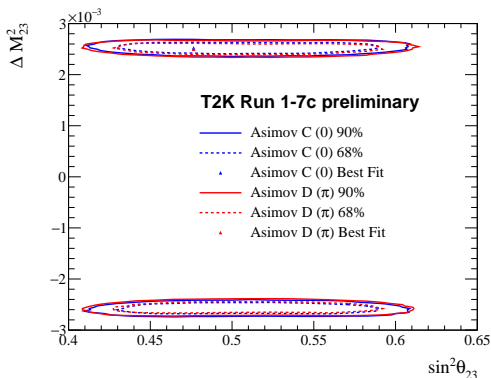
unoscillated
oscillated



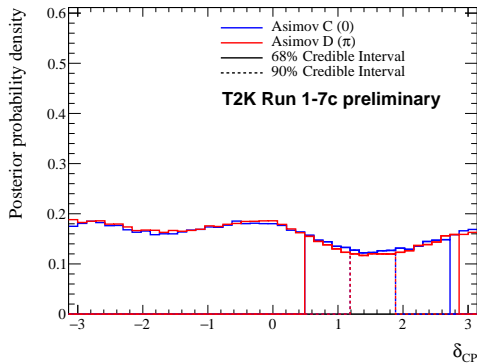
CP conserving sets - appearance parameters



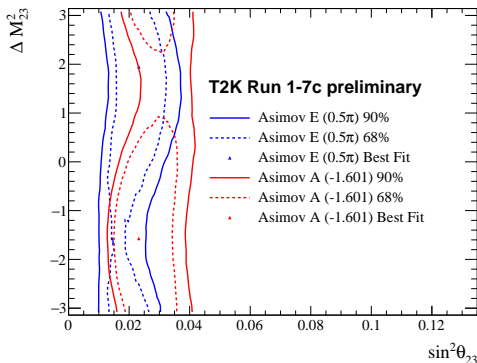
CP conserving sets - disappearance parameters



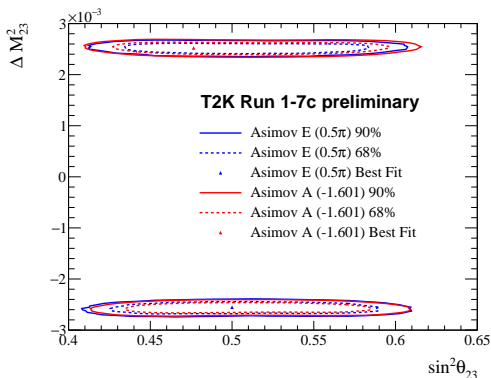
CP conserving sets - dcp



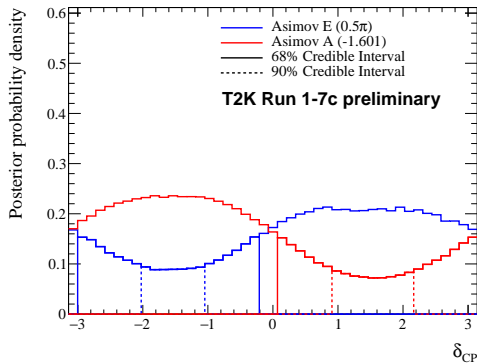
CP violating sets - appearance parameters



CP violating sets - disappearance parameters



CP violating sets - dcp



- ▶ Little difference between CP conserving asimovs
 - Spectra are very similar (see right
- ▶ CP violating Asimovs show tighter exclusions for -1.601 than $\frac{\pi}{2}$
 - This is due to there being a lot more ν_e events for -1.601 than for $\frac{\pi}{2}$
- ▶ wRC being processed now