

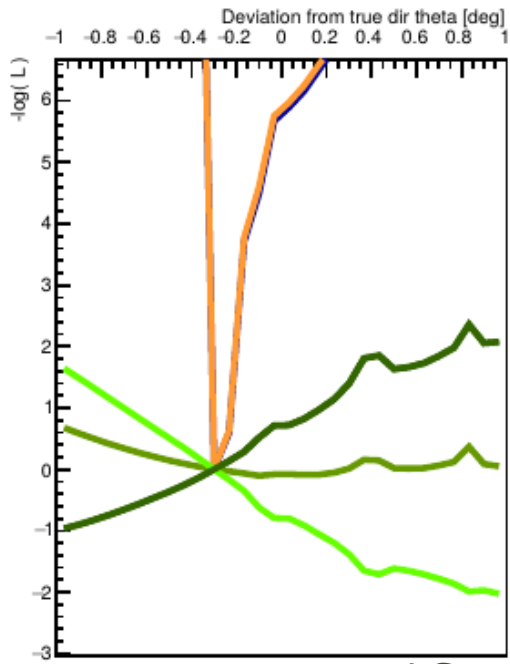
# Elongation steps in likelihood

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December 12<sup>th</sup> 2020, Group Meeting



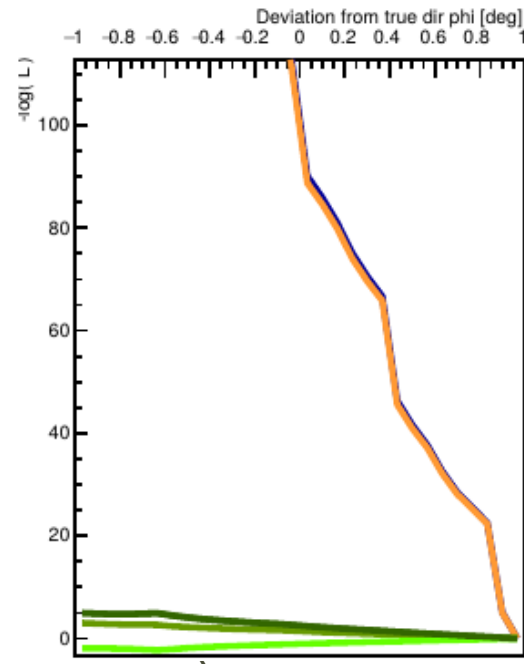
1 event is produced from a single  $\nu$ , with light contribution sampled along an EM-shower profile.

Question: How many sampling steps are needed in the reconstruction to accurately model the shower?

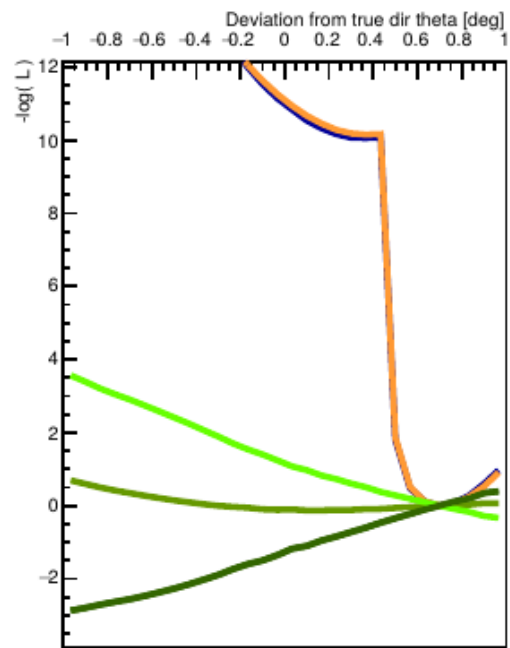


1 Step (shower max)

unhit likelihood, lik, theta

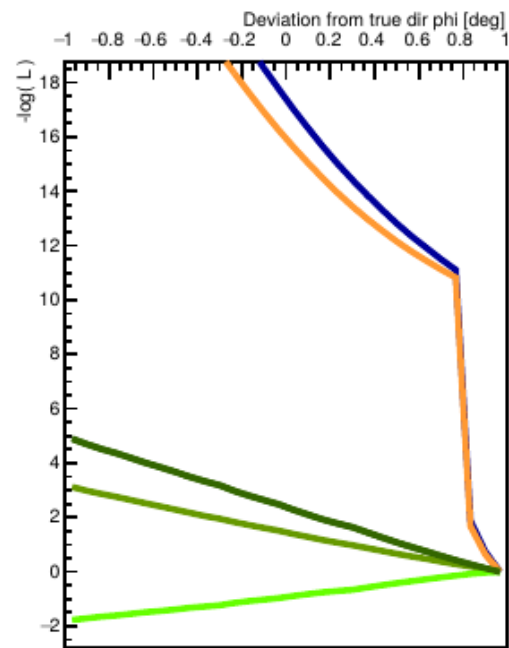


unhit likelihood, lik, phi



unhit likelihood, lik, theta

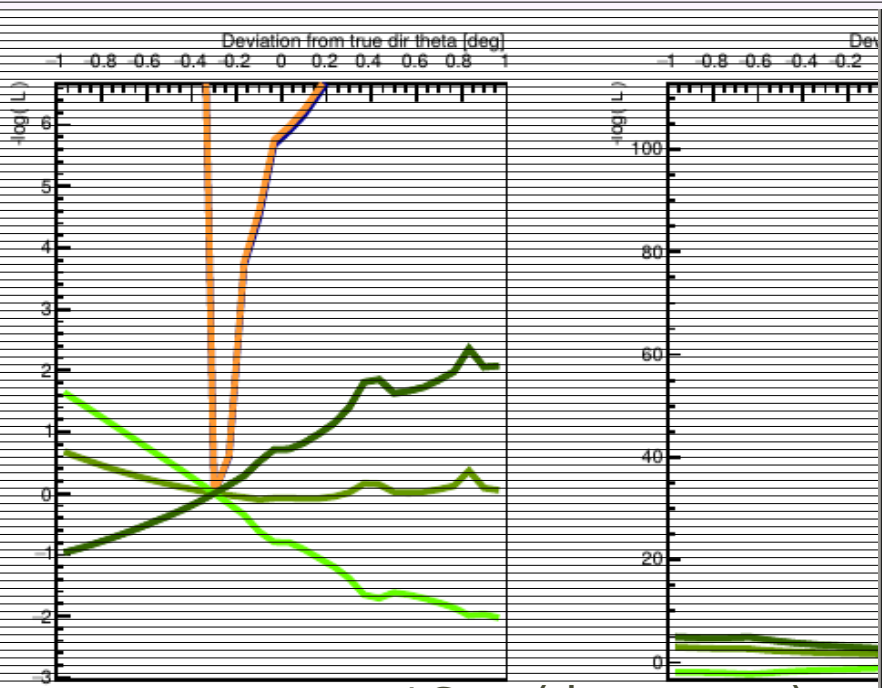
10 Steps



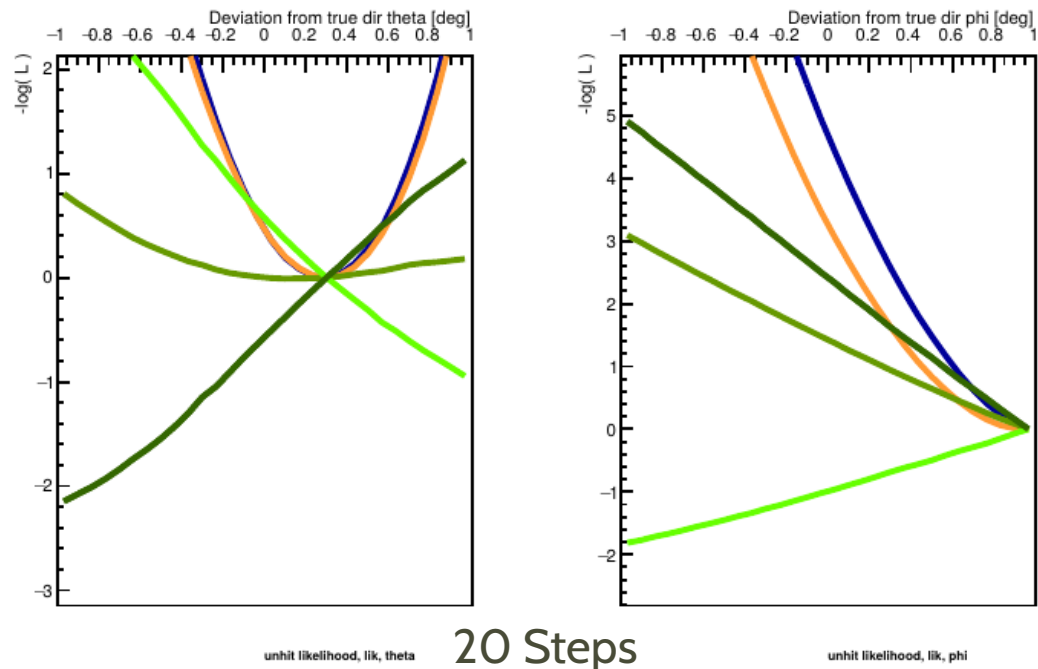
unhit likelihood, lik, phi

20 Steps

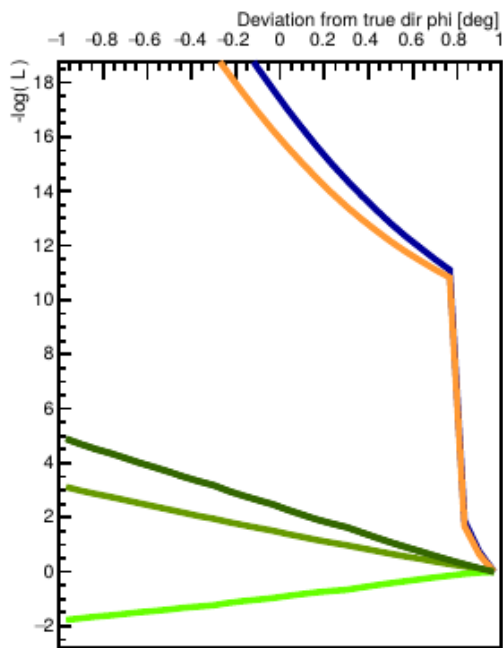
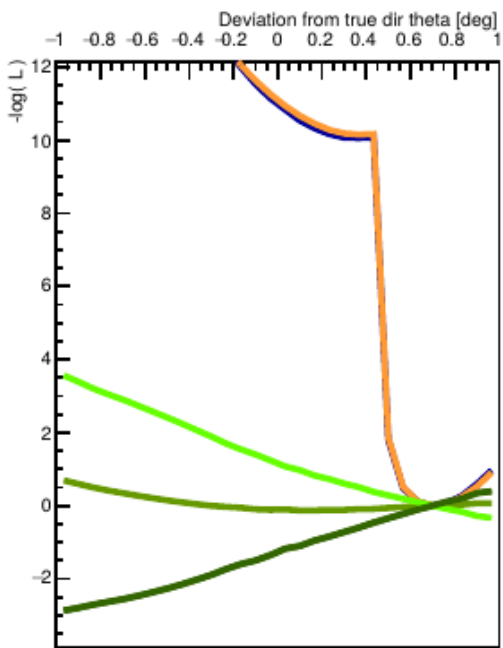




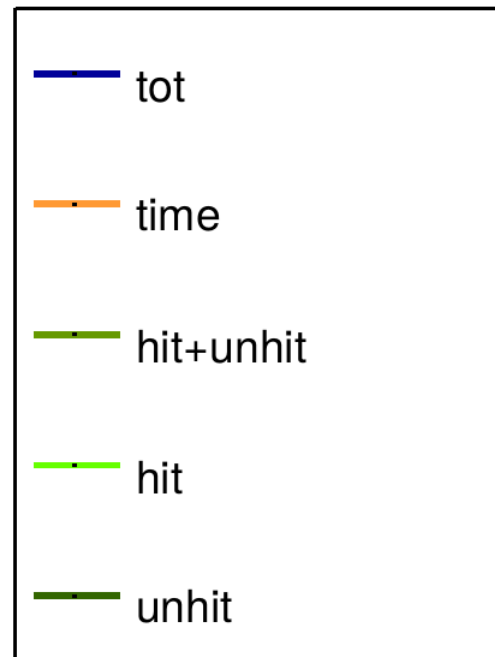
1 Step (shower max)



20 Steps



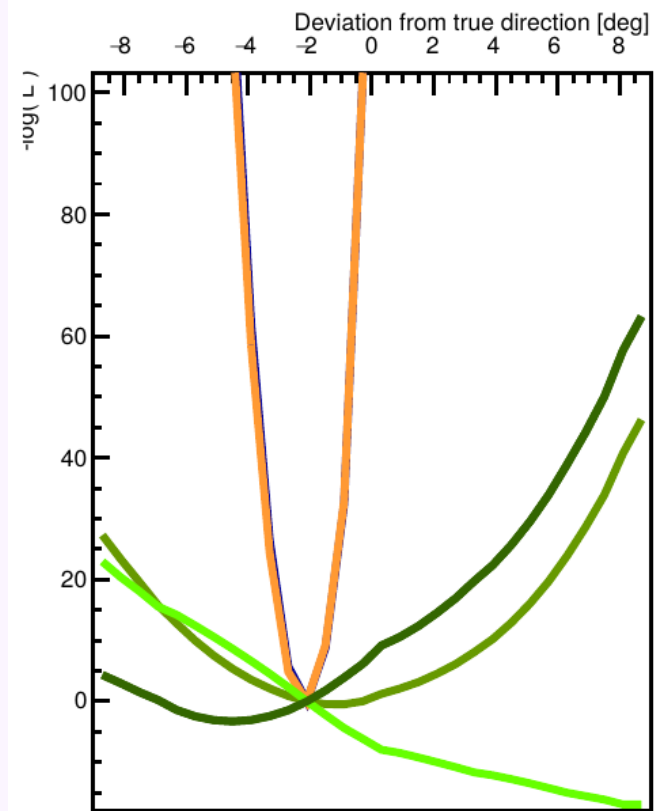
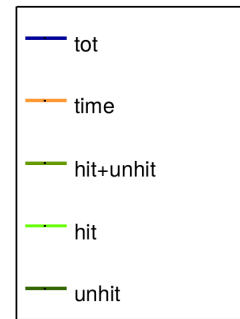
10 Steps



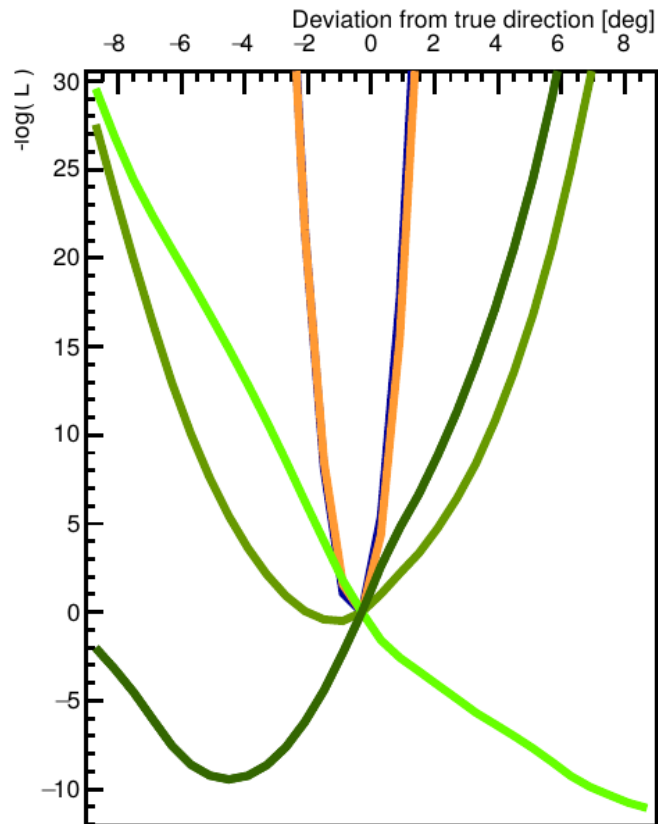
1 step

10 step

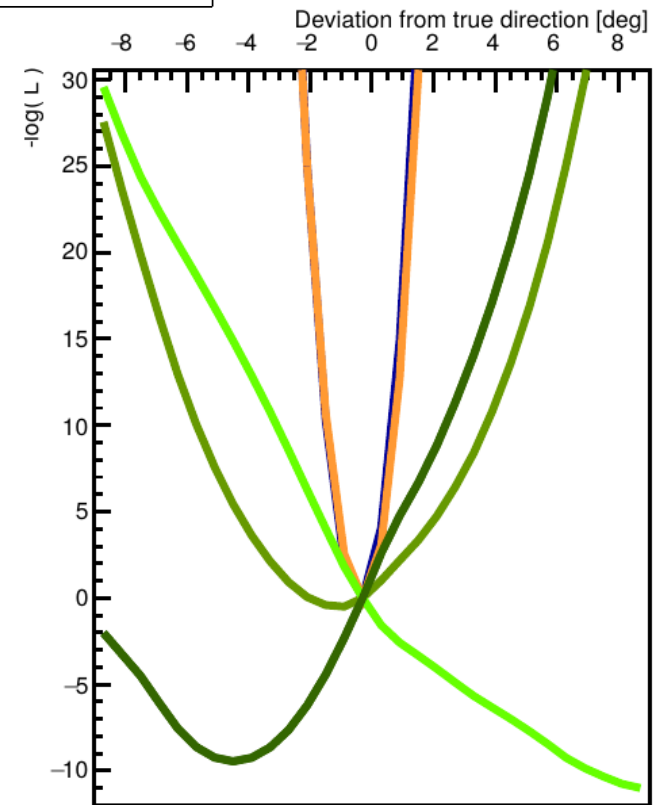
20 step



unhit likelihood, lik, direction\_mc\_pos



unhit likelihood, lik, direction\_mc\_pos



unhit likelihood, lik, direction\_mc\_pos

Next steps:

- Plot likelihood including true minimal
- Include background in PDF
- Reconstruct MC hits of v5 MC