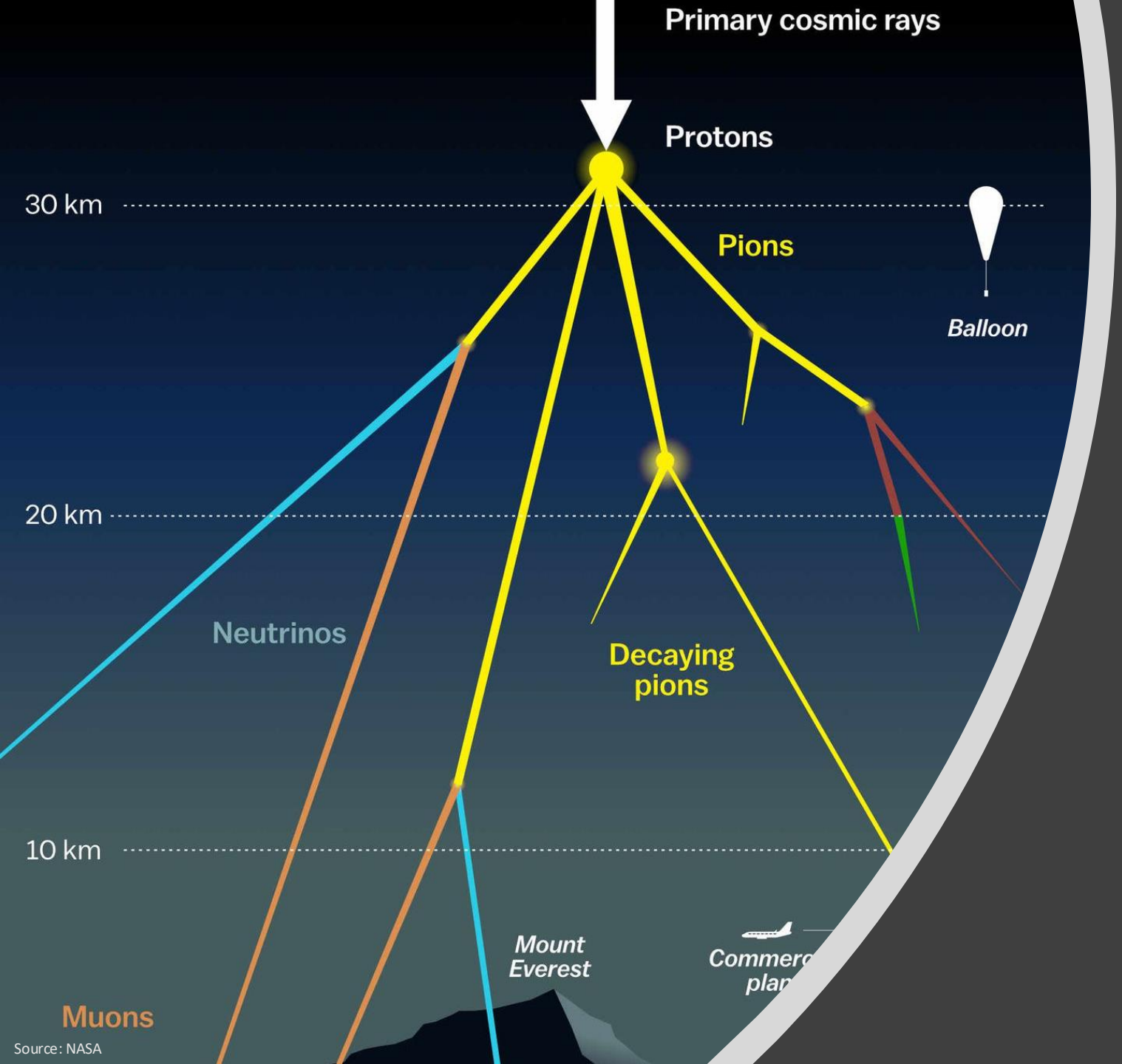


Measuring the prompt component of the atmospheric muon flux

Pascal Gutjahr

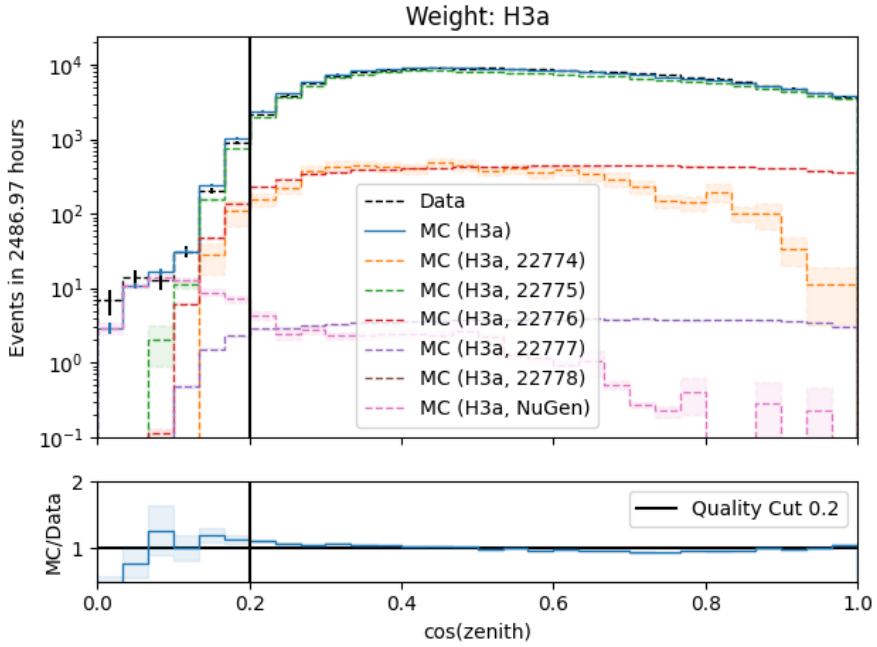
August 27, 2024

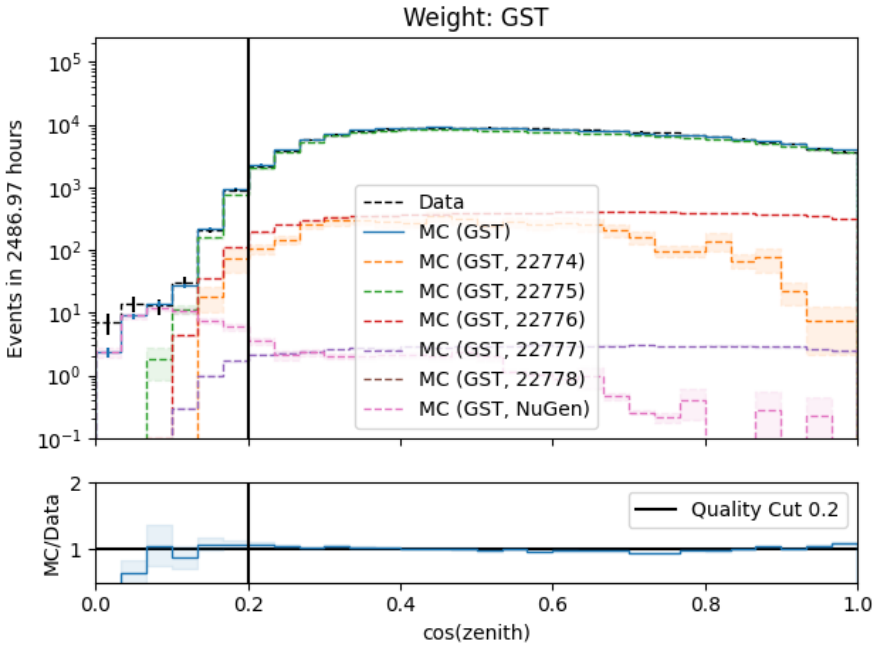
General information

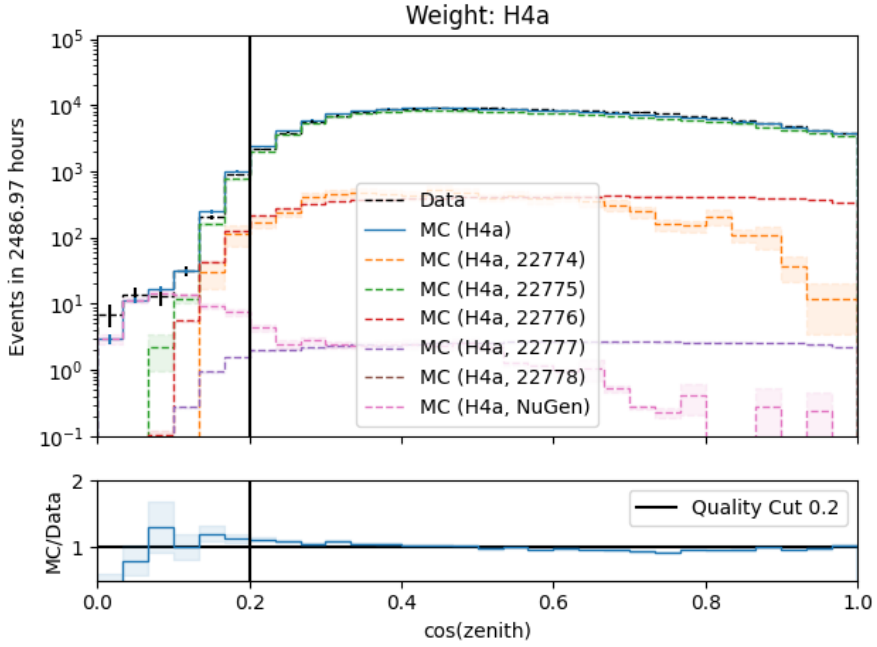
- 22774 -- 22778: datasets using CORSIKA extended history, simulated with IceProd
- NuGen: includes astro and atmospheric component
  - astro: gamma = 2.6, n = 1.5
  - atmospheric: MCEq (H3a, H4a, GST, GSF)
- Weights for different primary models are scaled to the number of experimental data to compare the shapes → at the end of these slides, there are the rates shown for each month to see the difference of the overall normalization

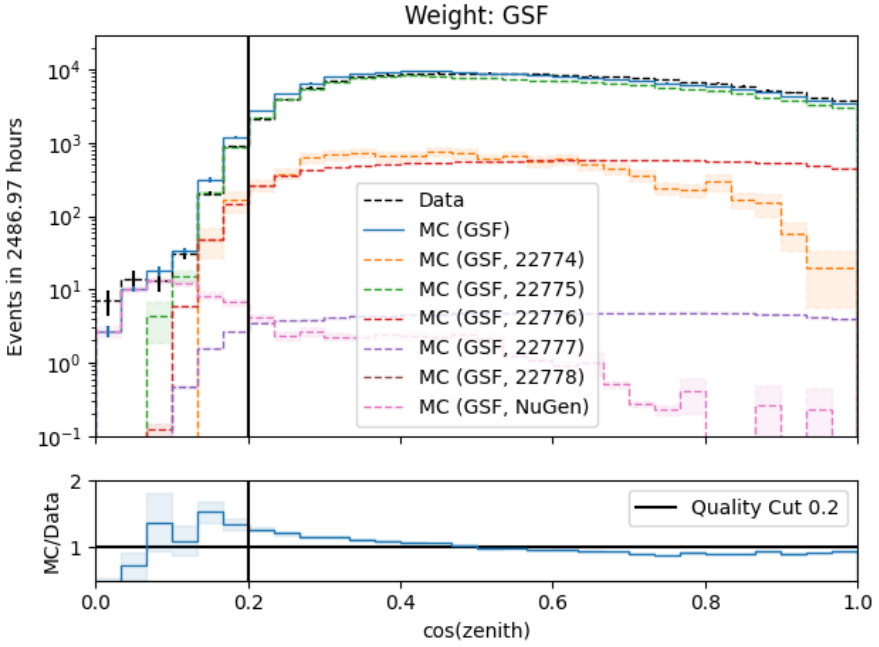
level4: muon filter and 500 TeV bundle energy cut at surface

level4: cos(zenith)









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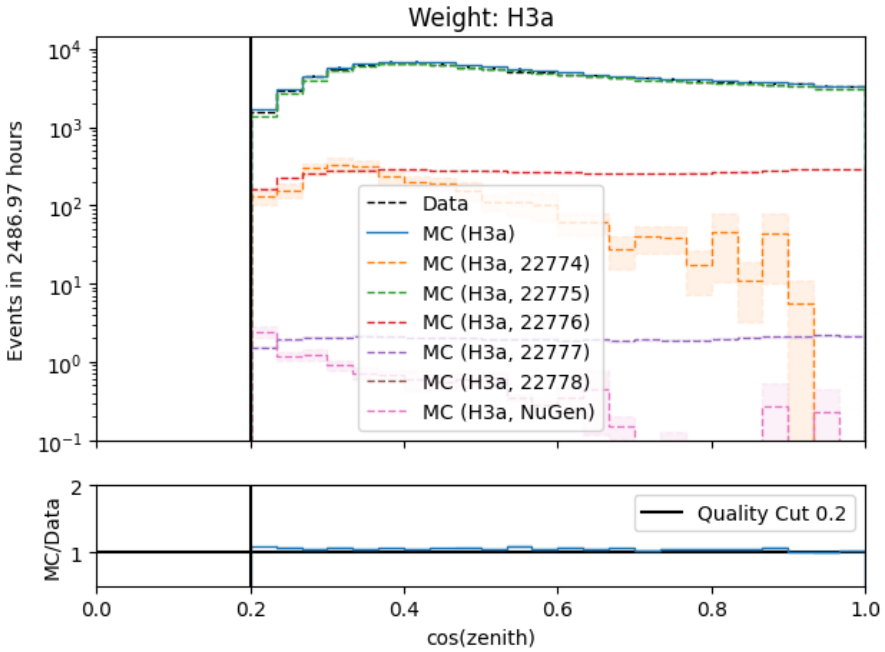
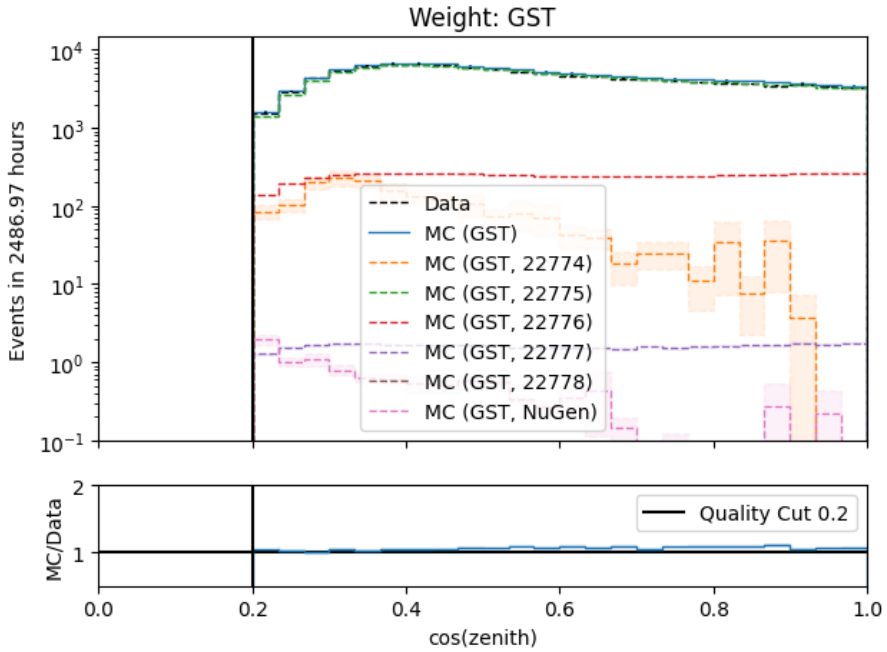
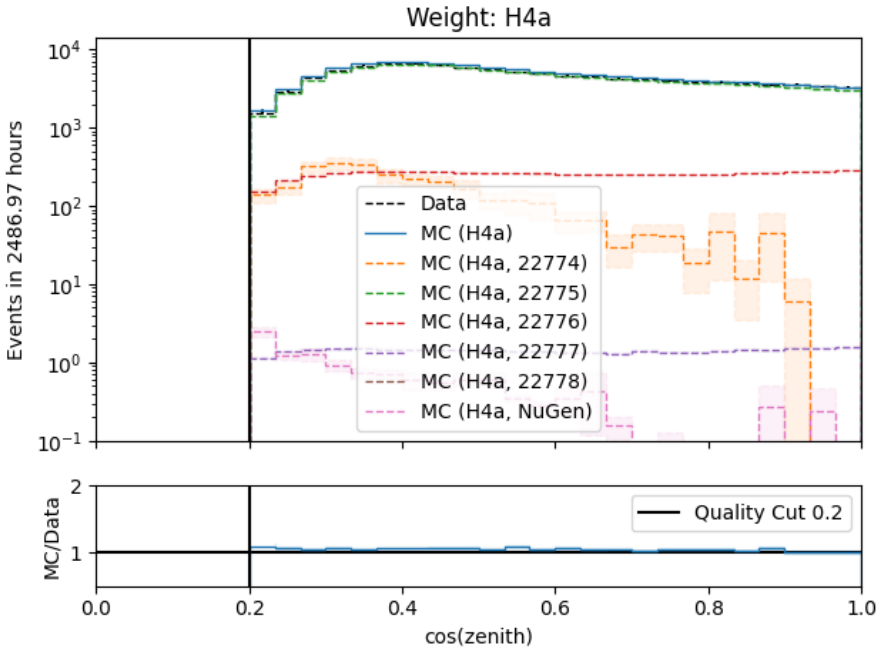
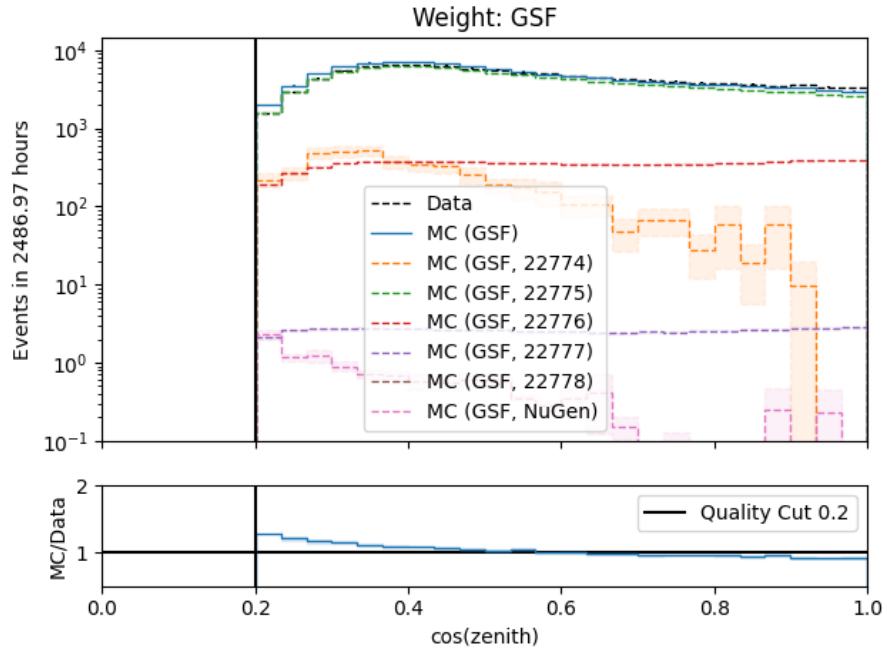
level5: level4 + quality cuts to improve data-mc

level5: cos(zenith)









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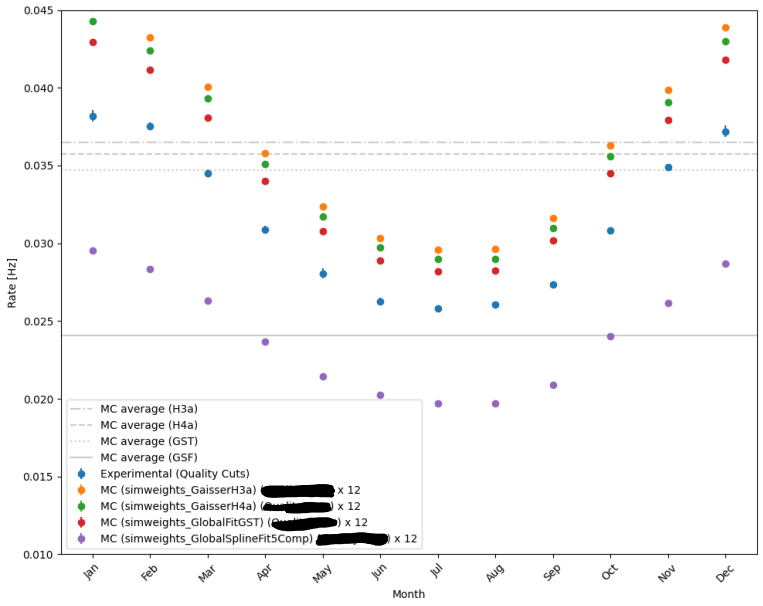
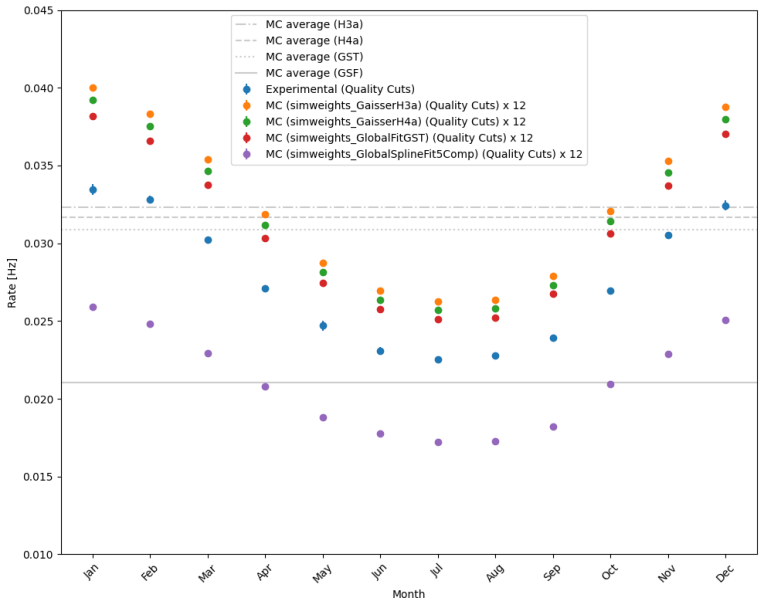
Rates per month

level4 (no quality cuts)



level5 (quality cuts)



level5 (quality cuts) – scaled weights