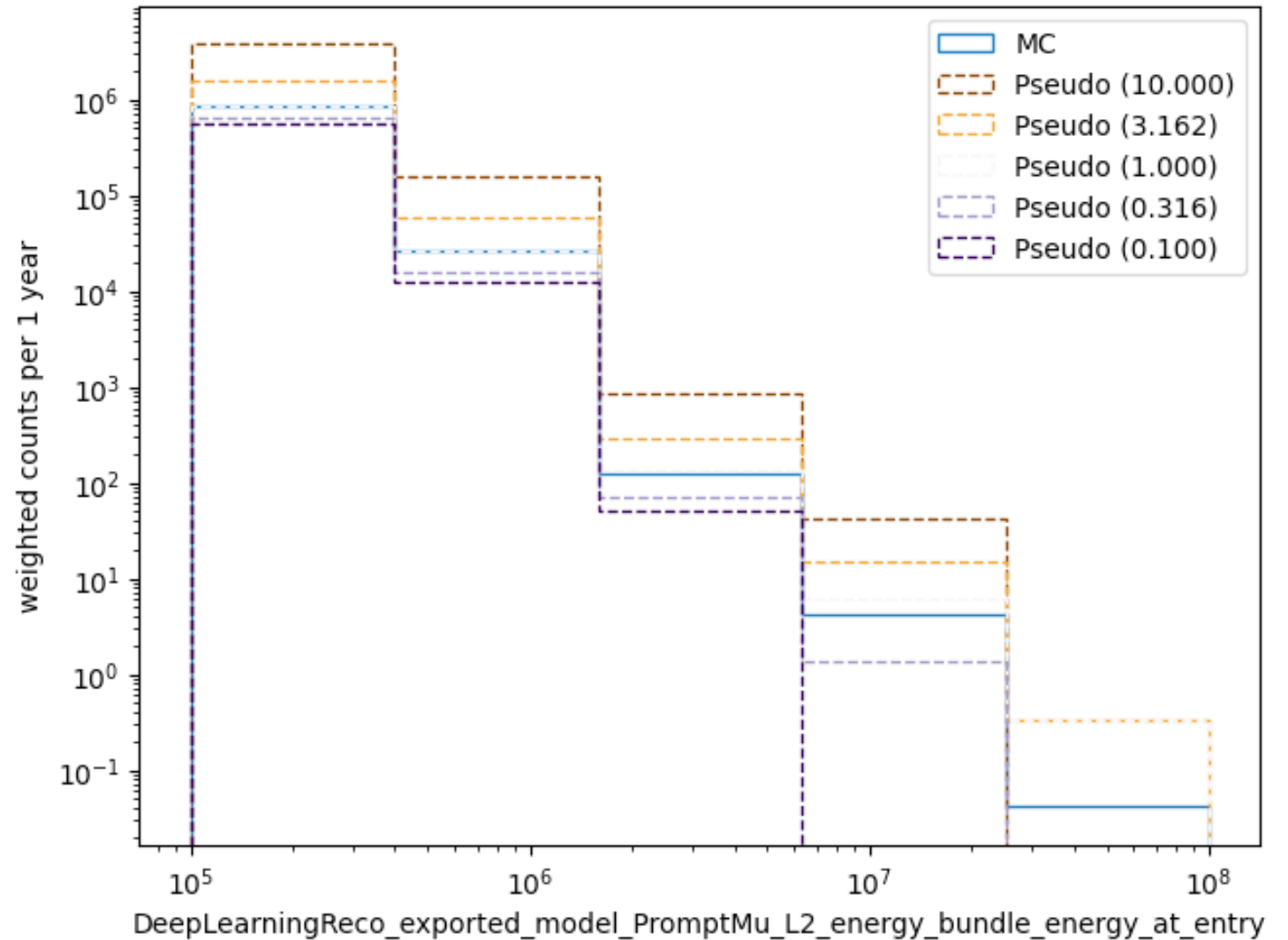


Prompt Muons

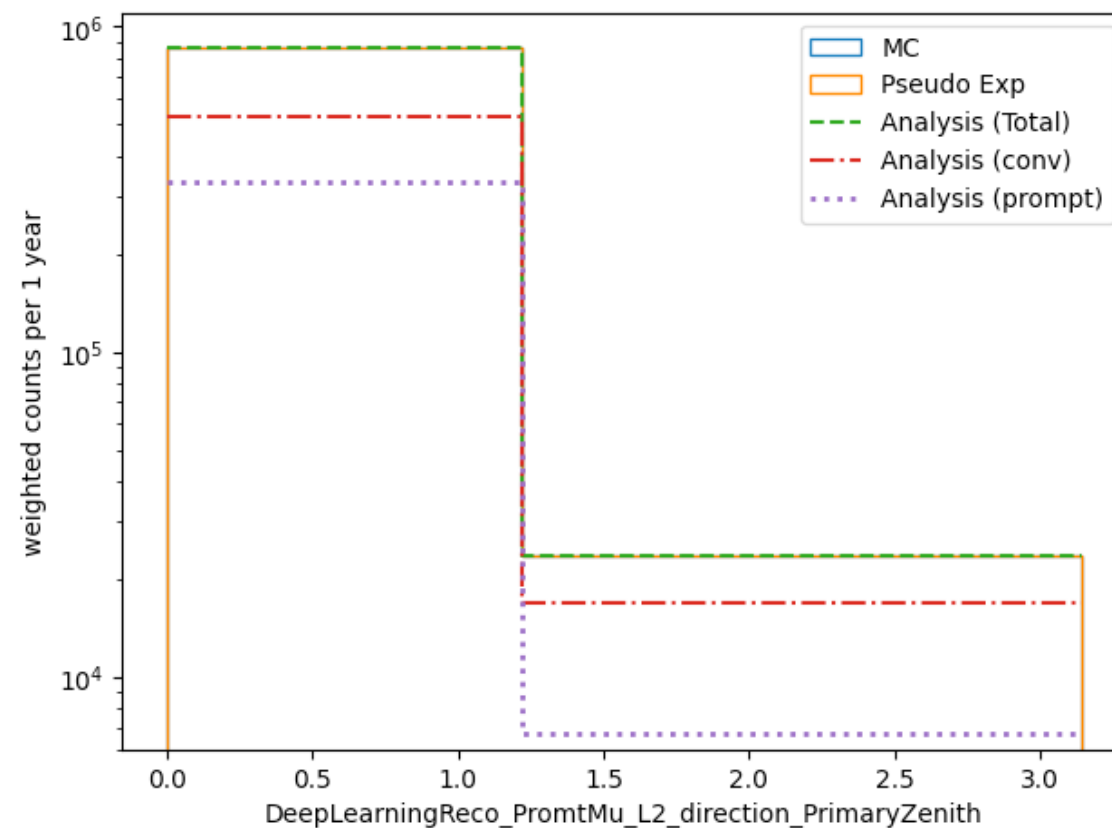
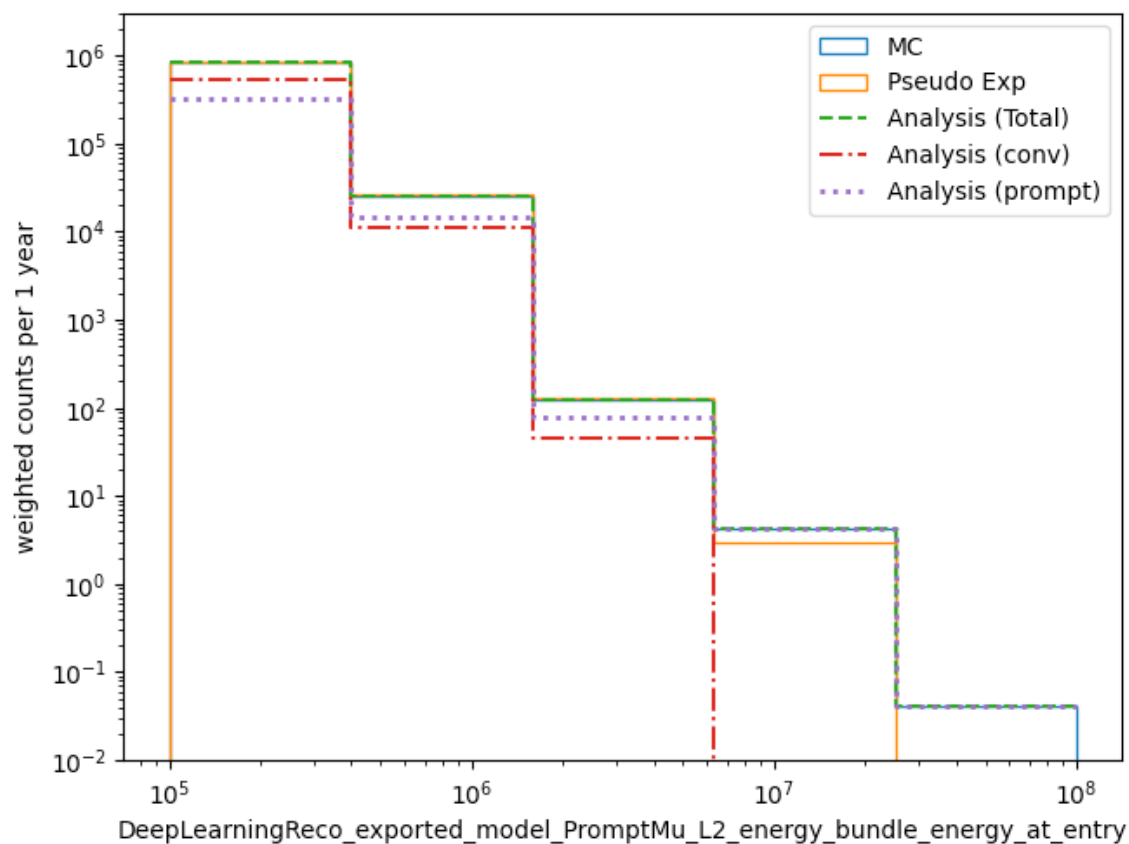
Goal: maximum likelihood fit using a poisson distribution in
energy and zenith

Create pseudo data

- Sample events from MC as pseudo data
- Use reconstructed bundle energy at entry point
- Apply several prompt scalings

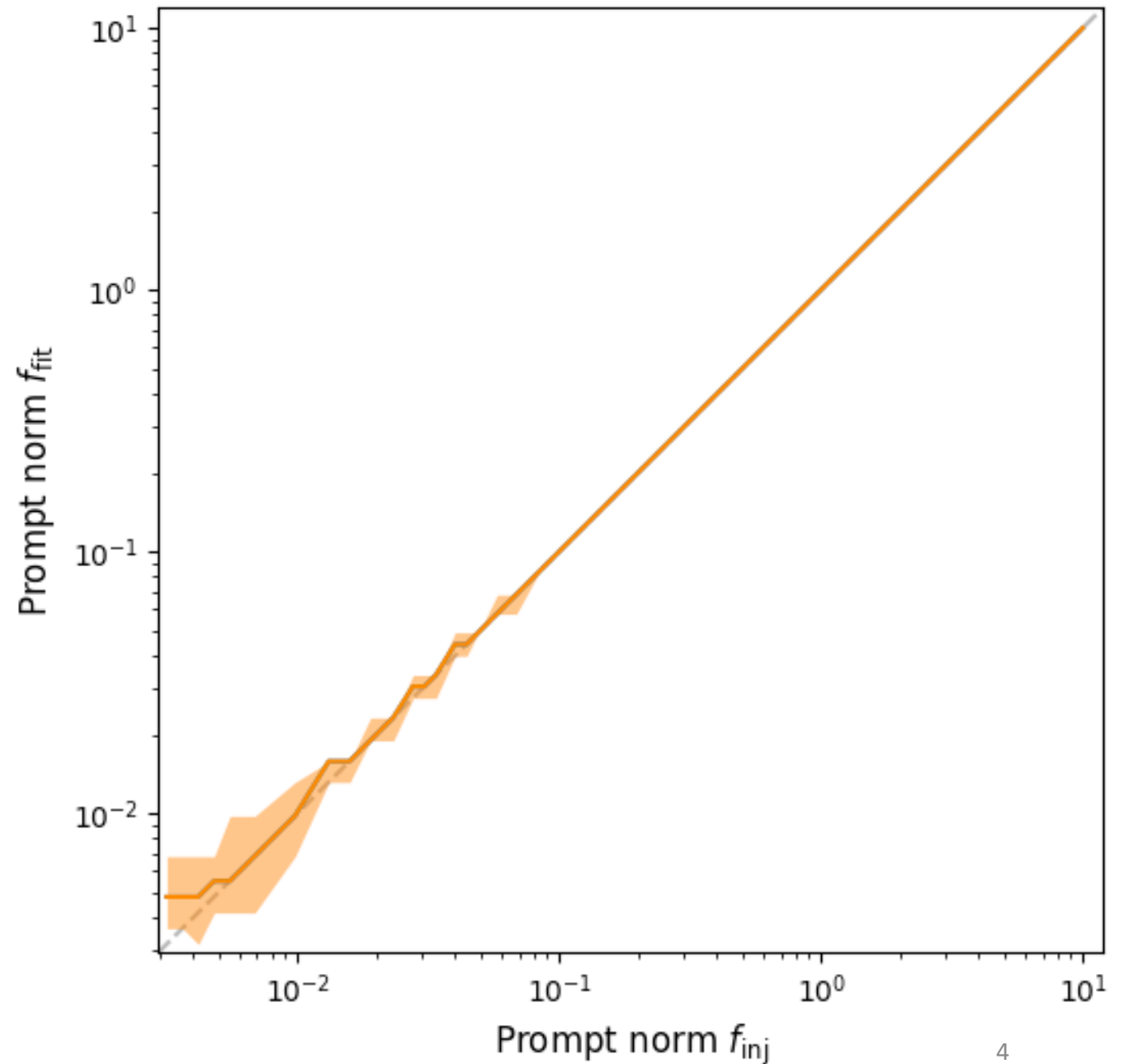


Check energy and zenith distribution



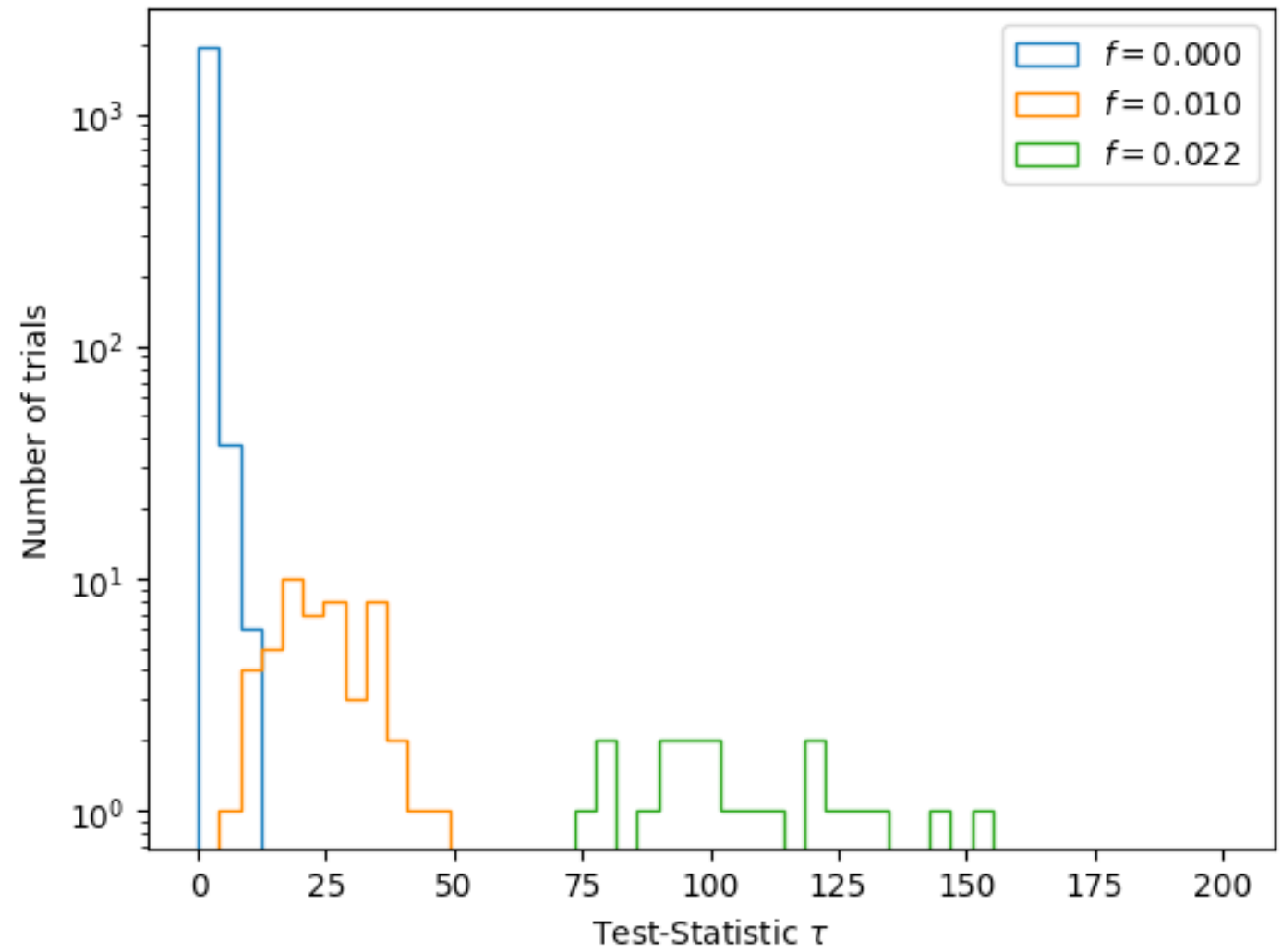
Check bias

- Bias below $f = 0.1$ prompt
- Looks promising



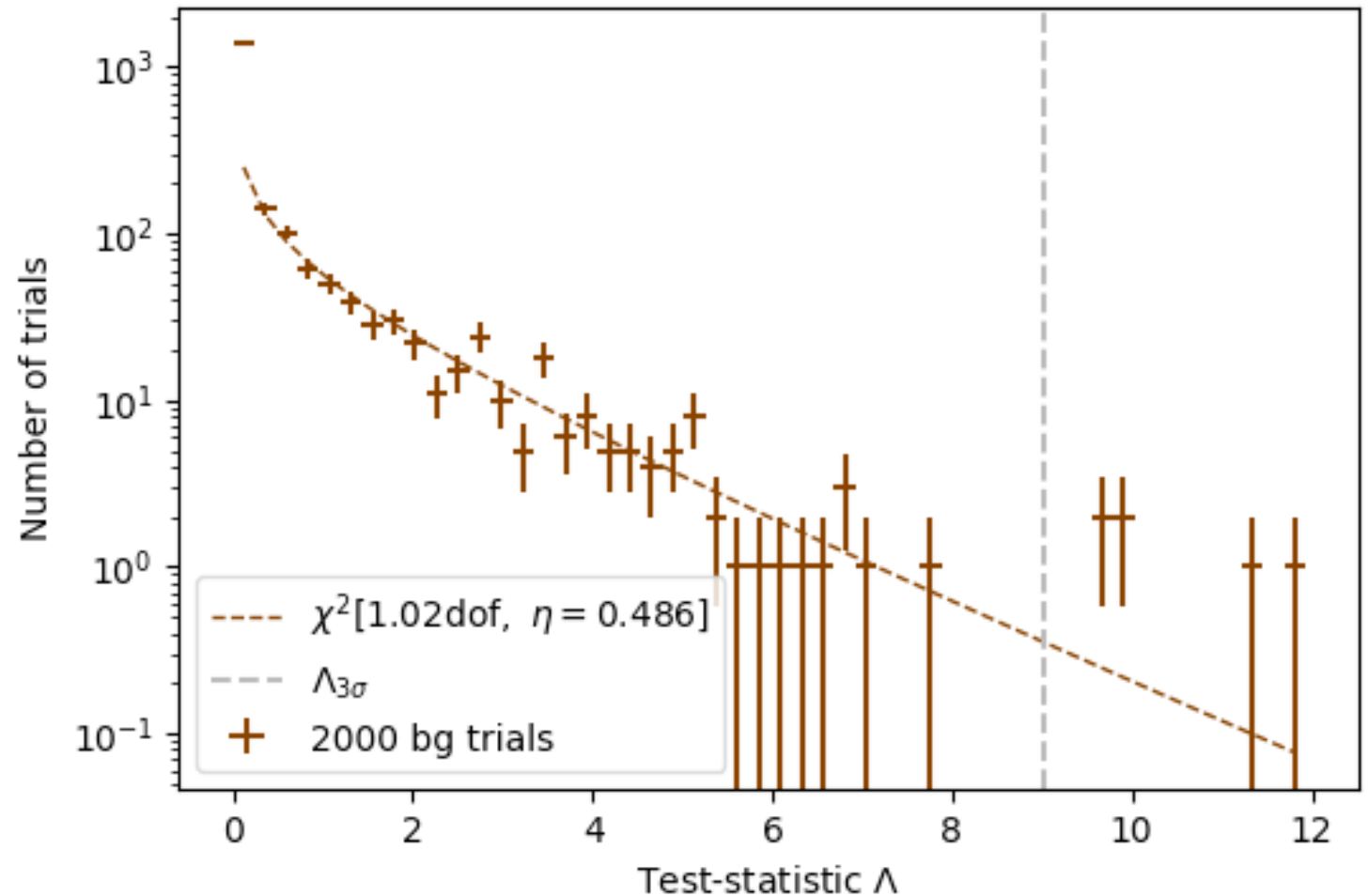
Test statistics

- Seems like even $f = 0.01$ prompt can be measured
- Only 20 trials per scaling



Check if test statistics follow χ^2

- Good agreement
- At high test statistics: too less simulation data
- More MC is needed
- Discovery potential: $f = 0.01$



Next steps

- Give an update in the cosmic ray call
- Analyze different primary weighting
- Check data-MC agreements
- Analyze zenith-dependent data-MC (“zenith problem”)
- Test different energy and zenith estimators (with Ben and Leander)
- Test, how many years of data we need for this analysis → estimate processing time
- Check, in which phase space more MC data are needed

But, first of all:

- Hand in PROPOSAL paper
- Write ICRC muon deflection proceedings