

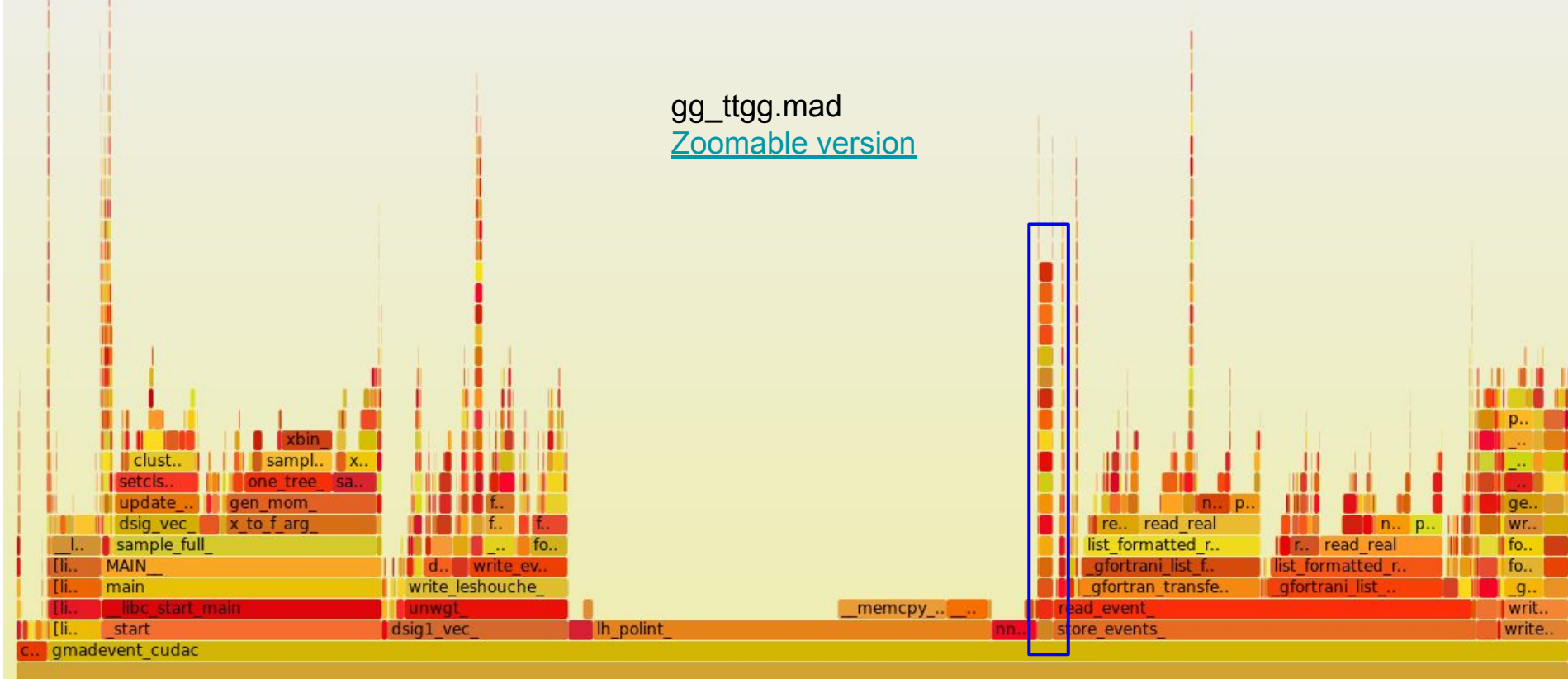
Madgraph

Unweighting

Our cuda is too fast ...

gg_ttgg.mad

[Zoomable version](#)

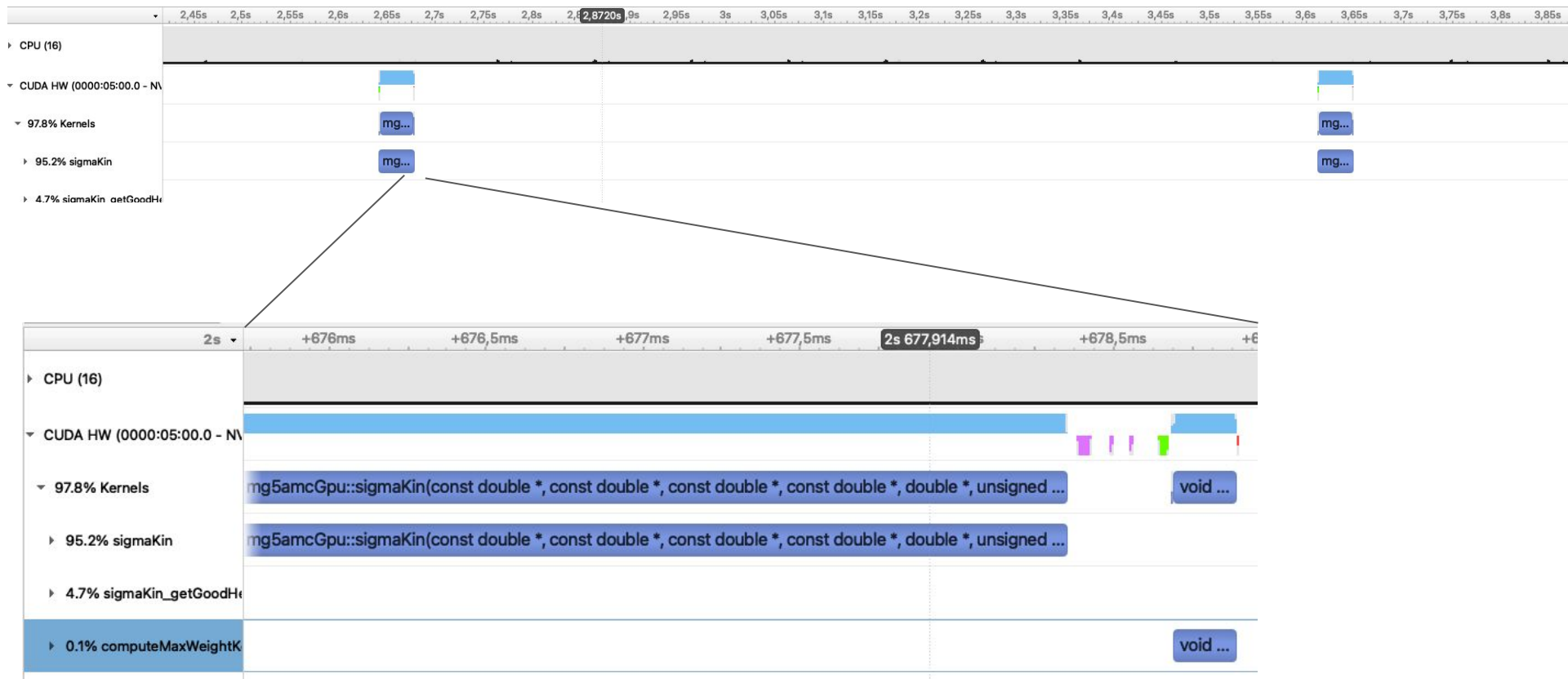


Can we do more on the GPU?

- Discussed unweighting with Olivier
- First requirement: Need to know the maximum weight in each batch
- Therefore:
 - Implemented a cuda kernel to compute the maximum weight on GPU from $\text{Jacobian} \cdot \text{PDF} \cdot \text{ME weight}$
 - Adds a few μs to each iteration
 - Seems to compute something ...

```
CHANNEL_ID =          2
RESET CUMULATIVE VARIABLE
Max event weight back to FORTRAN is      2.3035605364384192E-022
Max event weight back to FORTRAN is      6.1164334840559042E-023
Max event weight back to FORTRAN is      6.3023270266396391E-023
Max event weight back to FORTRAN is      4.0252476382893997E-024
Max event weight back to FORTRAN is      4.1013360451371550E-023
```

Profiler output



Observations

- To improve, we need to do much more on the GPU
- **Much** more!
- In gg_ttgg, improvements may only come from working on the FORTRAN side
- Expect it to be similar for simpler processes