First Steps with PAPA

CBM PWG-DIL Meeting

Adrian Meyer-Ahrens

July 30th 2021
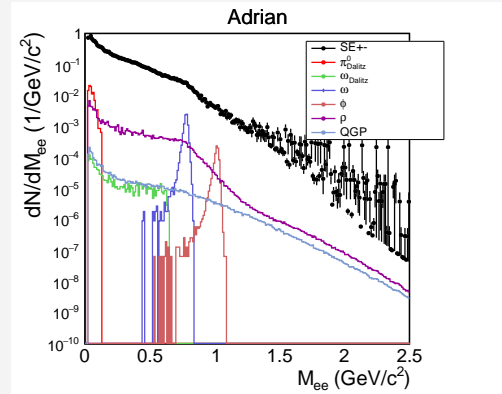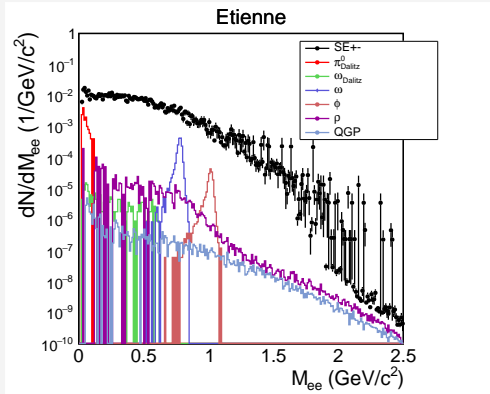
FAIR

GSI

CBM TRD

What I have done so far

▶ One week crash course with Etienne in March
▶ Get cbmroot & Etiennes scripts running on my lustre directory
▶ Run transport+digi+reco over UrQMD events
  $\Rightarrow$ Add LMVM & QGP-Radiation with Pluto
▶ Run PAPA analysis with Etiennes default config and cuts
▶ Produce first inv. mass spectrum and compare to Etiennes results (ongoing)

Inv. Mass Spectrum

$\sim 500k$ Events, Au+Au 12 AGeV $0-5\%$

Differences & Possible Explanations

Opened communication with Etienne, to compare spectra and find explanations

1. **A lot more QGP rad, in-med ρ**
   ▶ Multiplicity setting added 10 times more of these per event (?)
2. **More π^0_{Dalitz}**
   ▶ Additionally added with pluto, but UrQMD already generates them (?)
3. **Thinner peaks for ϕ and ω**
   ▶ Change in magnetic field or tracking?

$\Rightarrow$ New sim/analysis with changed multiplicity setting and without adding π^0_{Dalitz} currently running

$\Rightarrow$ Compare magnetic fields

Next Steps and Questions

Next Steps

- ▶ Continue reproducing Etiennes spectrum/results
- ▶ Then what? $\Rightarrow$ Find own tasks/problems to look into

Questions and Needs

- ▶ More communication
- ▶ Who else is using PAPA?
- ▶ Who else is doing dielectron analysis?
  $\Rightarrow$ Get to know people for questions and discussions