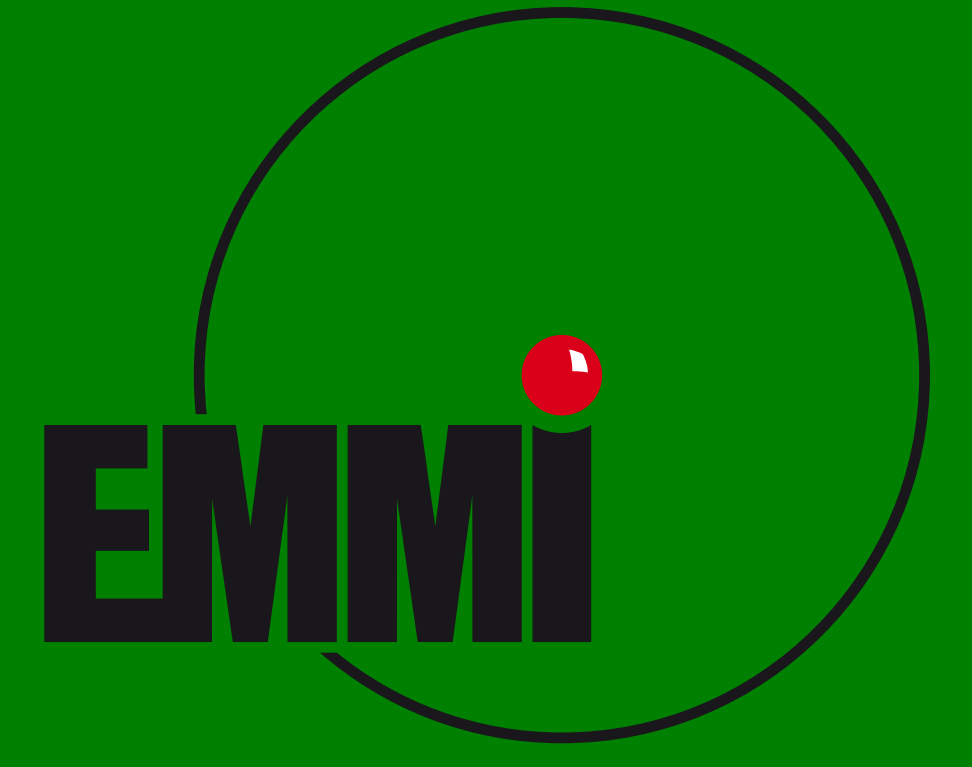


Low-mass dielectron production in proton-proton collisions at $\sqrt{s} = 7$ TeV with ALICE

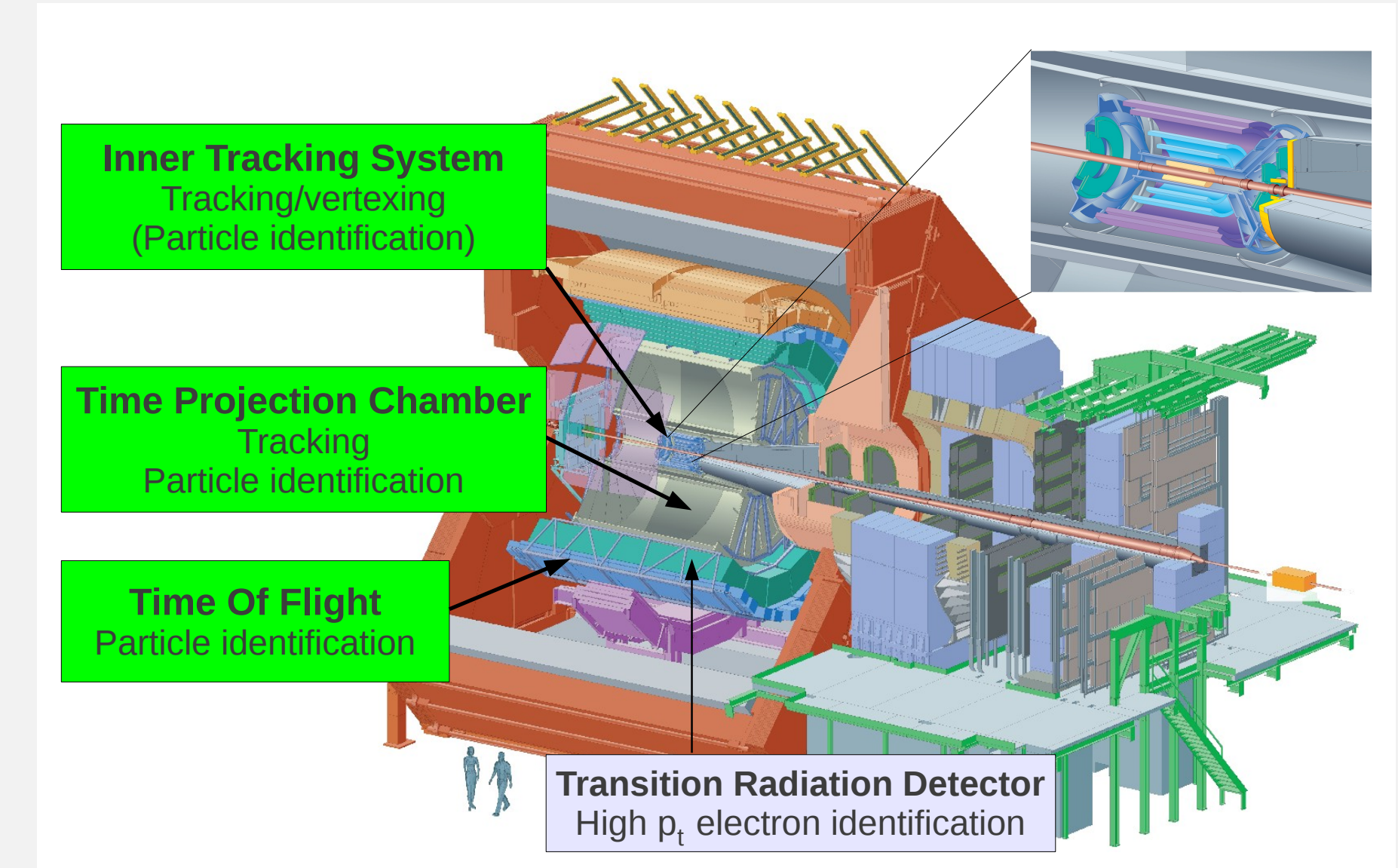
Markus K. Köhler for the ALICE Collaboration
Research Division and ExtreMe Matter Institute EMMI,
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GSI Science Days 2013, 26th August



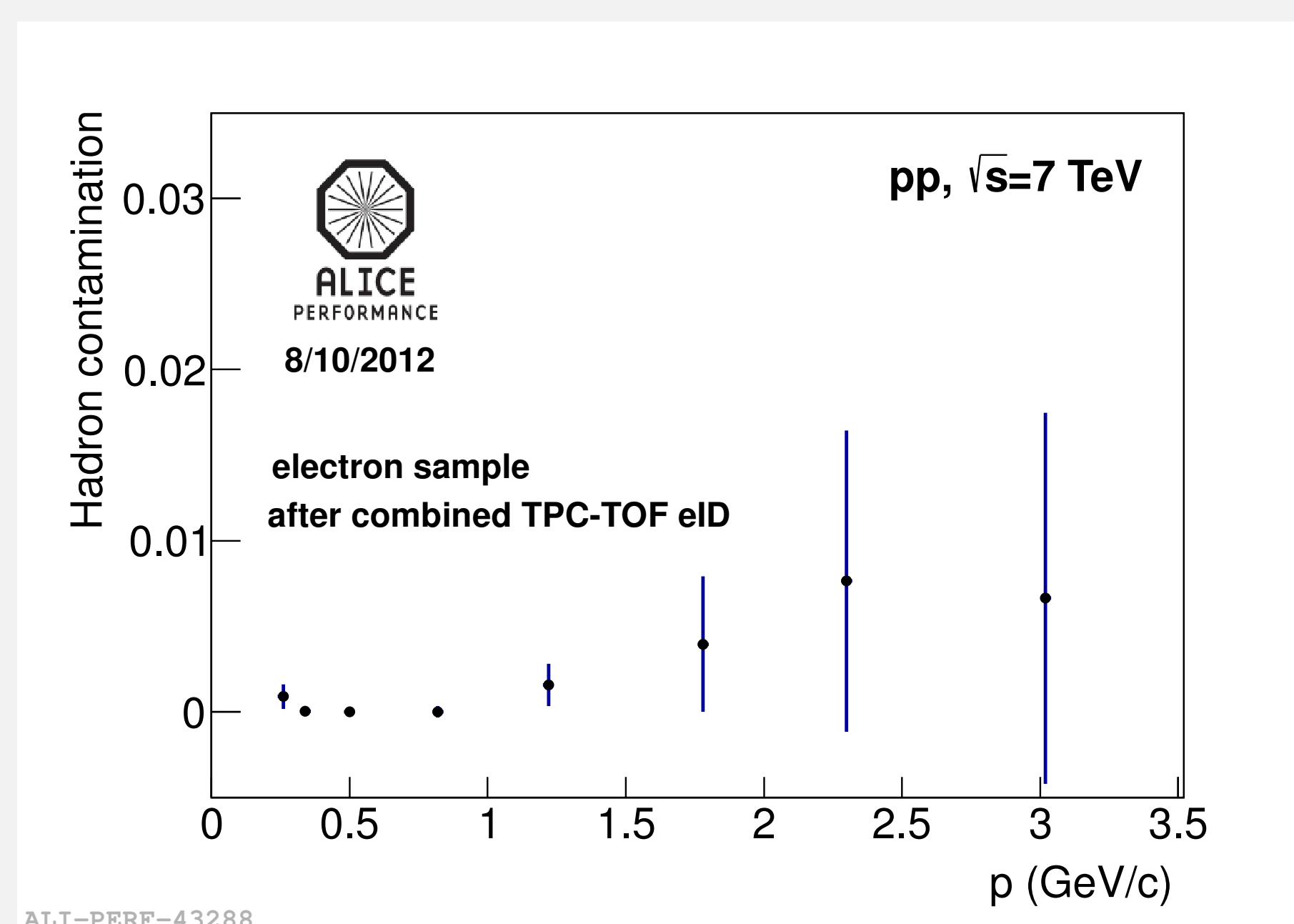
Dielectron continuum in pp

- negligible final-state interaction
 $\lambda_{\text{e.m.}}/\lambda_{\text{strong}} \propto \sigma_{\text{strong}}^2/\sigma_{\text{e.m.}}^2 \approx 10^4$
- direct quasi-real virtual photon production down to low-momenta
→ excellent test of pQCD
- separation of c and b contributions in dielectron phase-space
→ heavy flavour production mechanisms
- baseline measurement for Pb–Pb

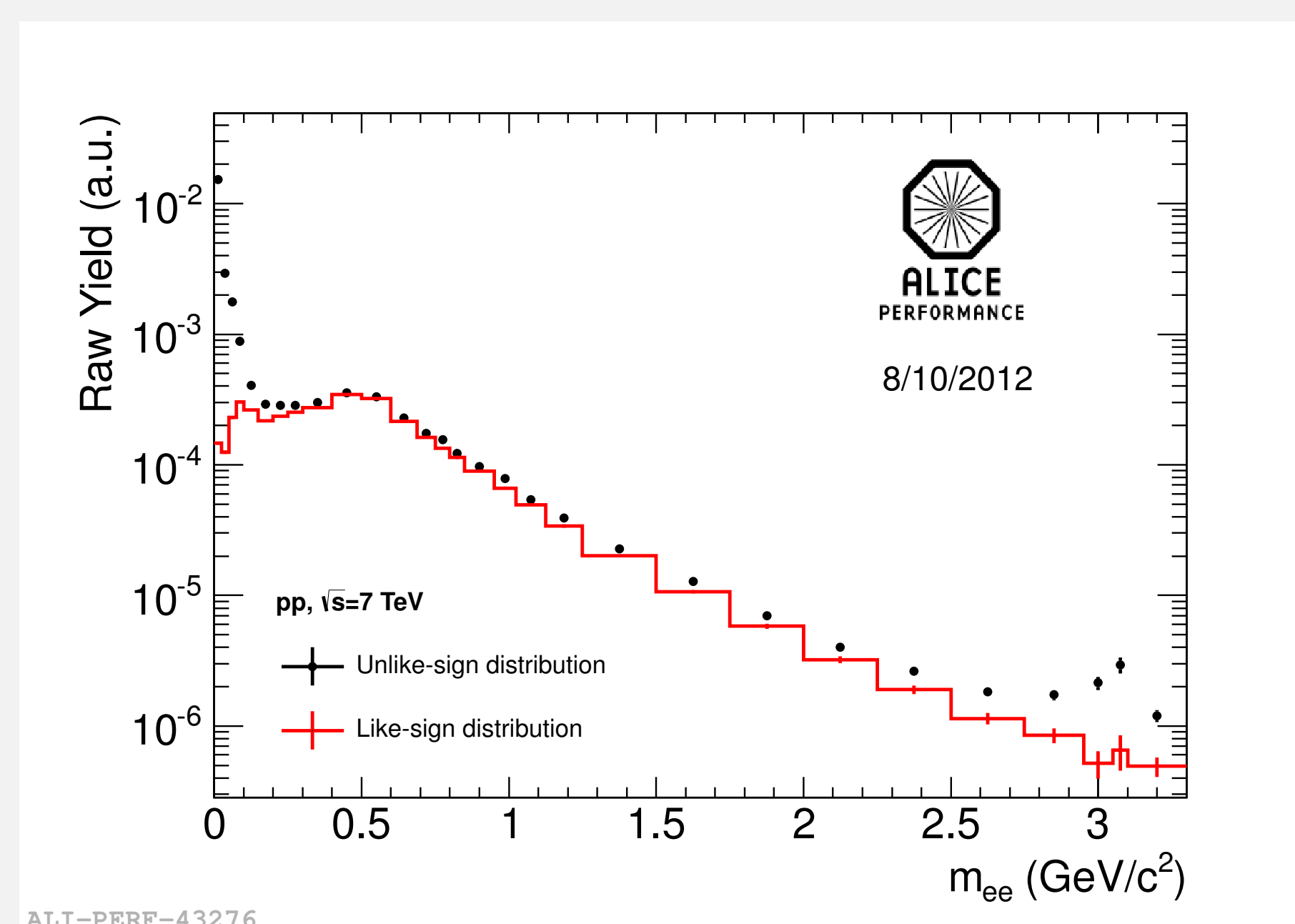
ALICE detector system



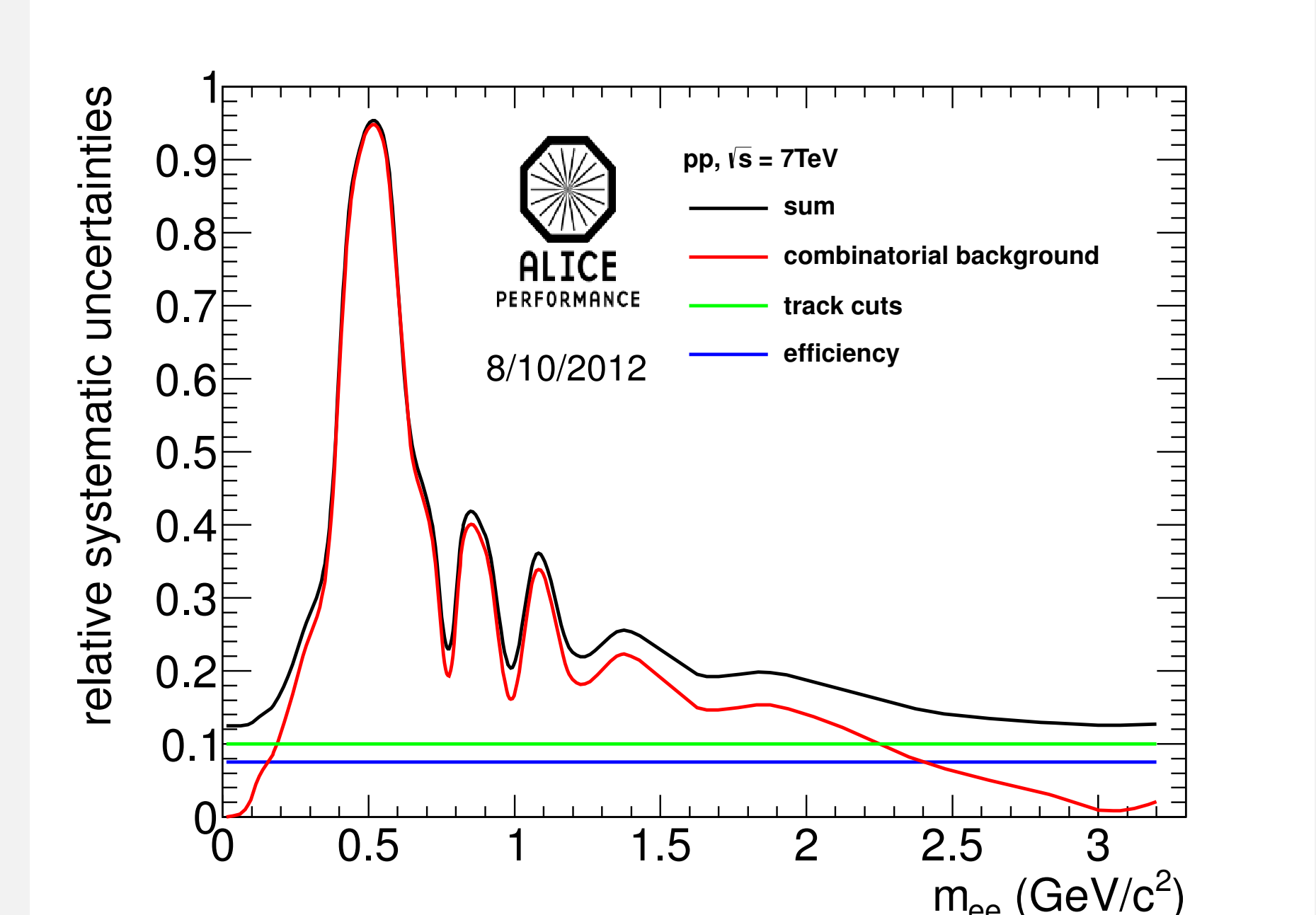
Analysis procedure



- combined eID in TPC & TOF
- high purity

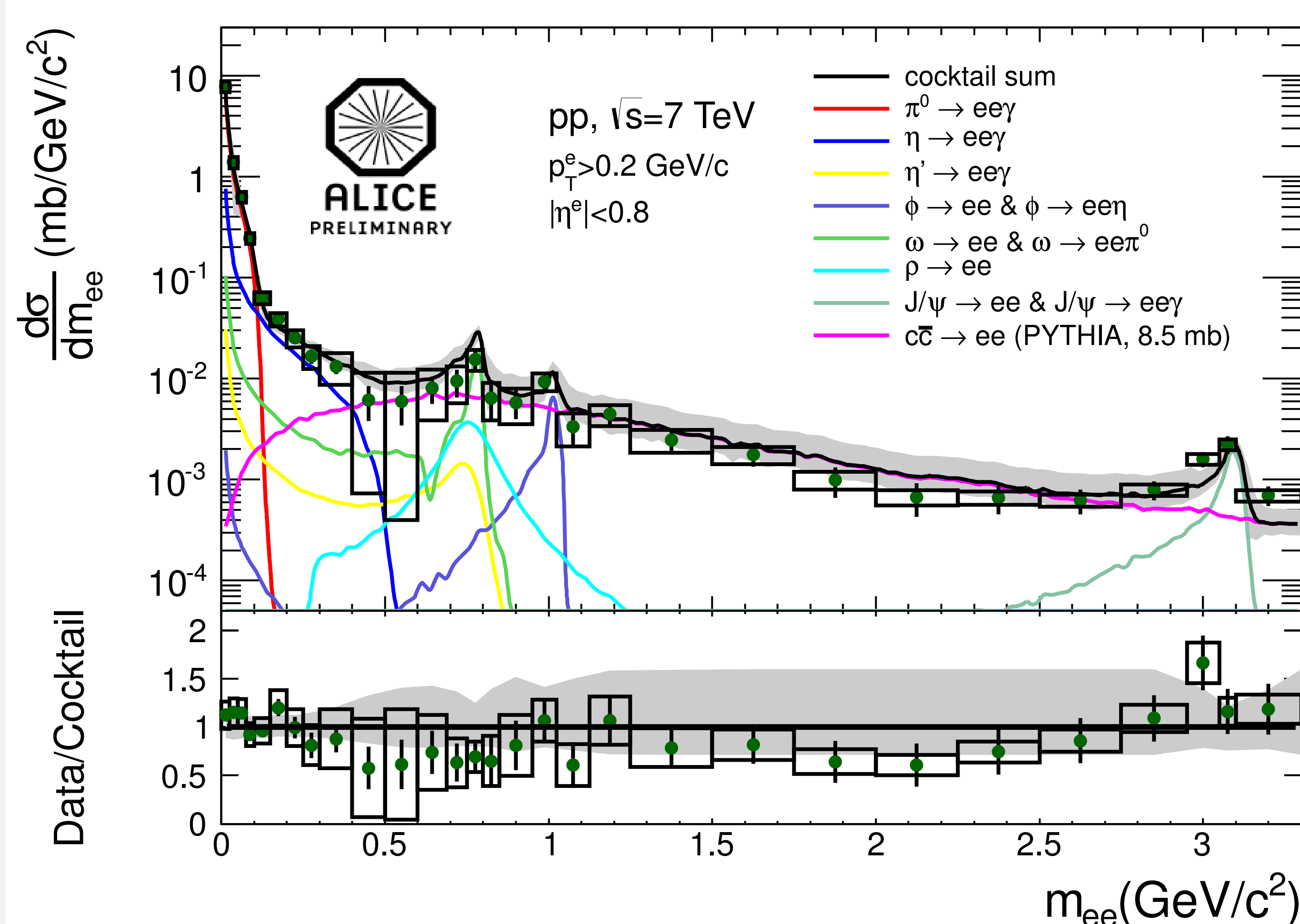


- large comb. bkg
- reconstructed with like-sign



- syst. uncertainty dominated by comb. bkg

Results



data consistent with hadronic cocktail calculations

outlook & next steps

- charm cross section measurement
→ independent cross check to published value
- virtual photon production
→ transverse momentum dependent evaluation
- analysis in Pb–Pb

References

- [1] π^0, η : ALICE Collaboration, PLB 717,162 (2012)
- [2] $c\bar{c}$: ALICE Collaboration, arXiv:1205.4007
- [3] ϕ : ALICE Collaboration, arXiv:1208.5717
- [4] J/ψ : ALICE Collaboration, PLB 704,442 (2011)