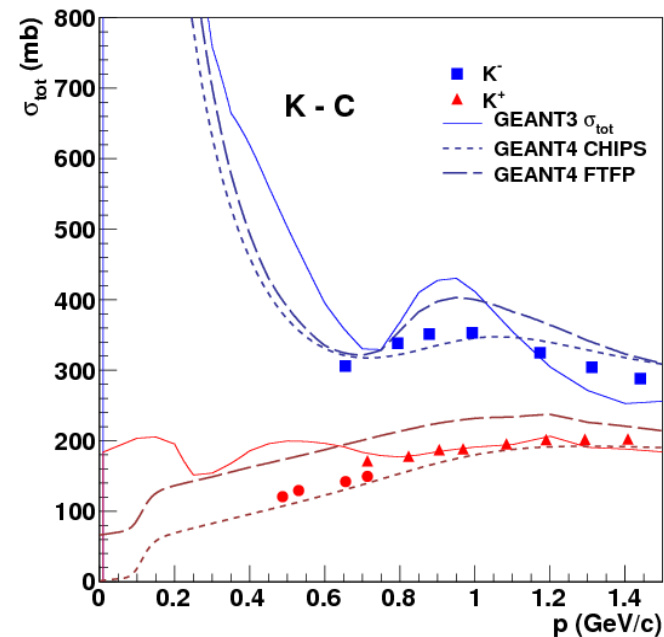
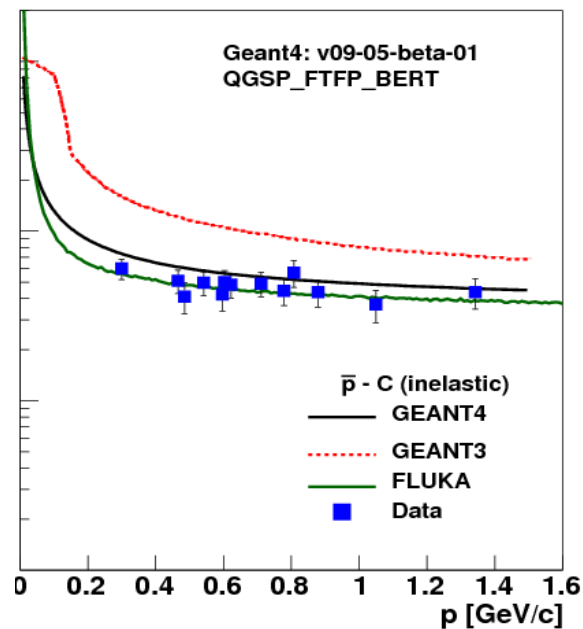
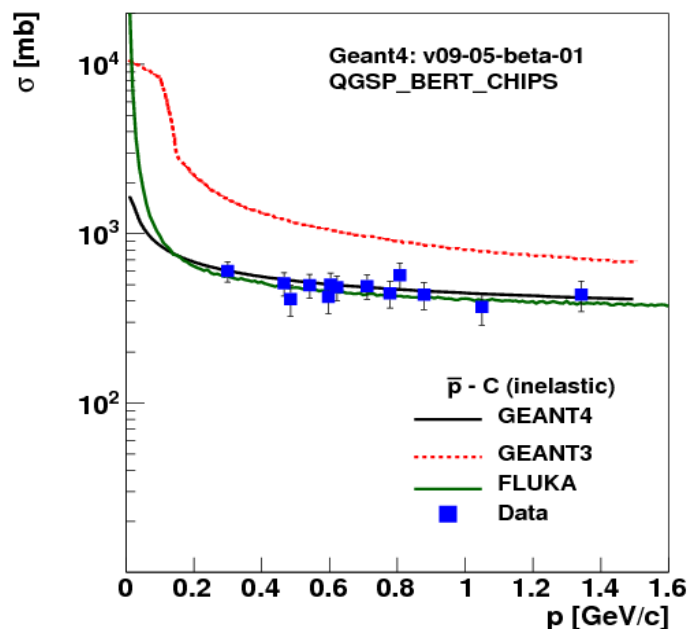


Requirements from ALICE

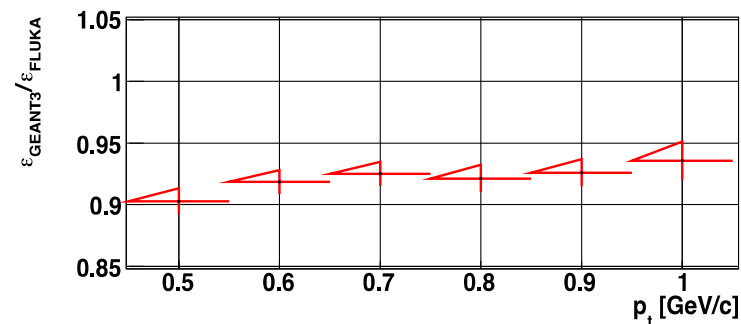
A. Morsch

G4 Technical Forum Nov. 8 2011

Strong interest in Geant4 for Identified Particle Spectra Analysis

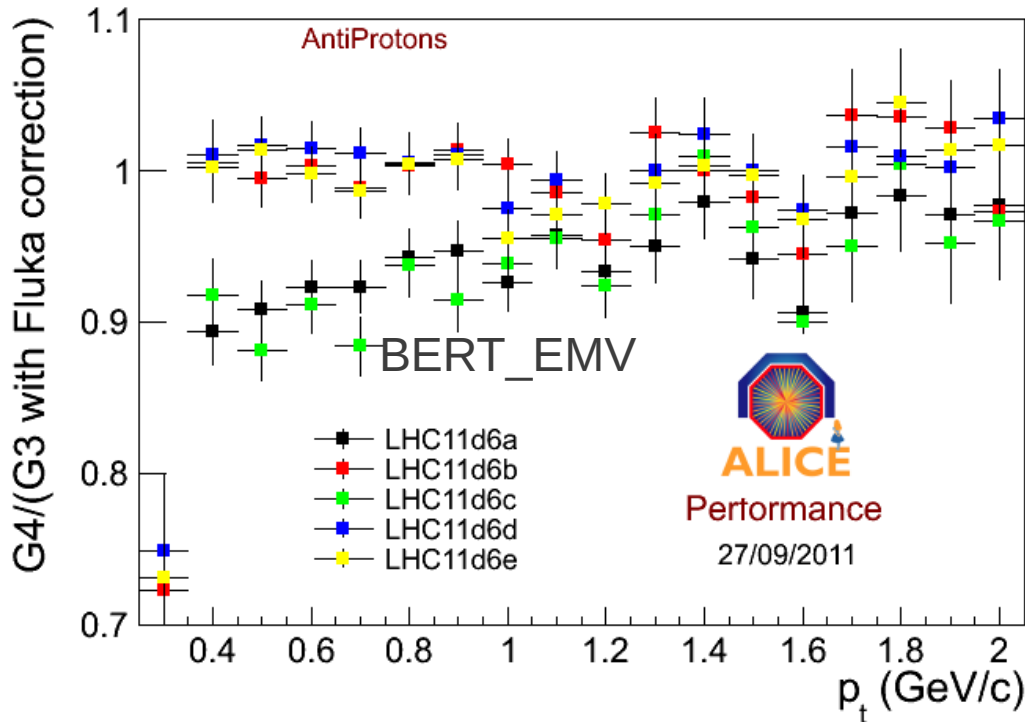


- (π, K, p) -A cross sections are not well reproduced in Geant 3 (our default transport)
- Much better in FLUKA: ad-hoc correction computed in 2009 for our pbar/p paper
- Geant4: as good as FLUKA, actively developed and validated, full support for ALICE
- K- better in G4?



Correction factor:
limited statistics and pT range

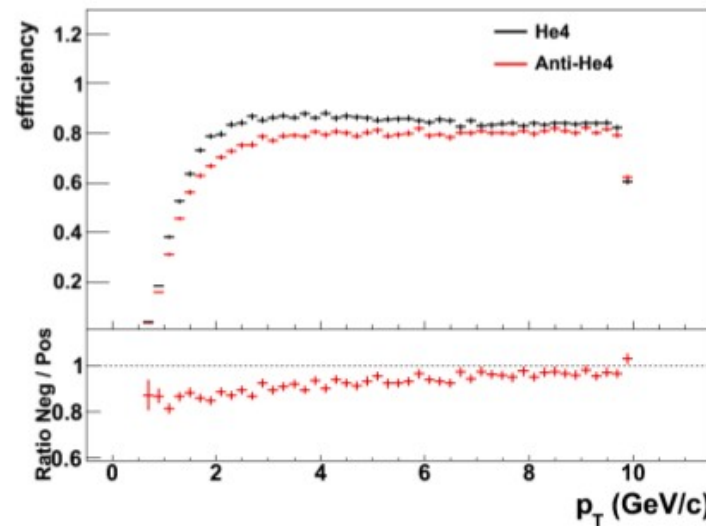
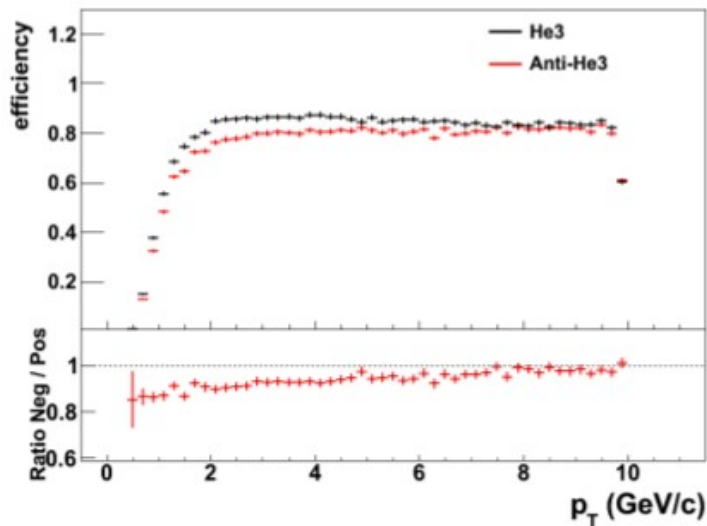
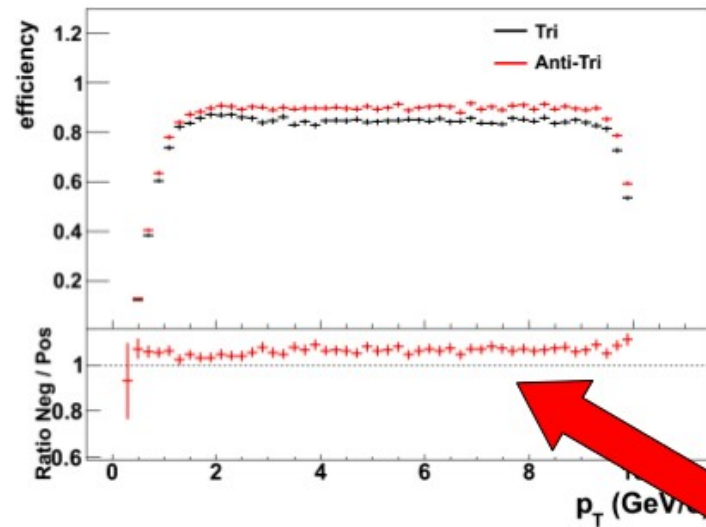
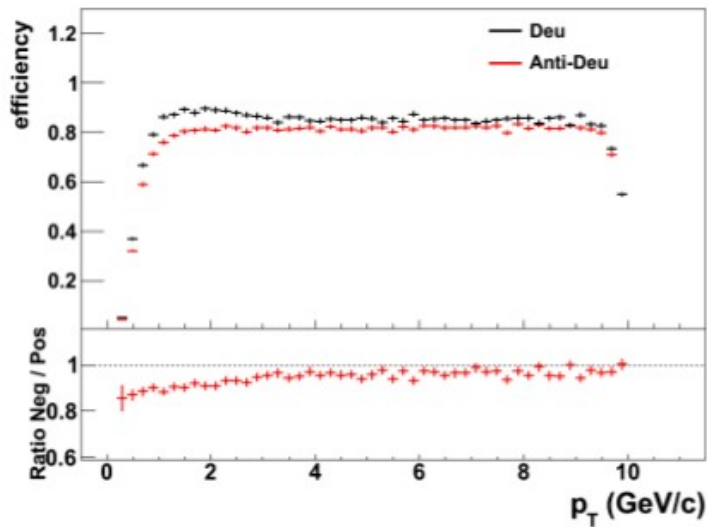
Anti-Protons



LHC11d6a	9.4.p02	QGSP_BERT_EMV	+optical
LHC11d6b	9.4.p02	QGSP_BERT_CHIPS	+optical
LHC11d6c	9.5.b01	QGSP_BERT_EMV	+optical
LHC11d6d	9.5.b01	QGSP_BERT_CHIPS	+optical
LHC11d6e	9.5.b01	QGSP_FTFP_BERT	+optical

- **Geant 4** does a good job, but the physics list matters!
- **Large productions needed**, using “QGSP_BERT_CHIPS” and “QGSP_FTFP_BERT” (this is also relevant for (anti)nuclei)

Anti-Nuclei



- Results for d, ^3He , ^4He show lower reconstruction efficiencies for anti-particles at low p_T
- Ratio of reconstruction efficiencies for tritons and anti-tritons is inverted to expected value and constant

Requirements

- Physics list that combines features of QGSP_BERT_CHIPS (anti-p, K-) and QGSP_FTFP_BERT (anti-nuclei)
- Investigate/correct problem with triton.