

Publication Status & Plans Munich Perspective

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AHCAL Meeting, DESY, December 2011



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The Status

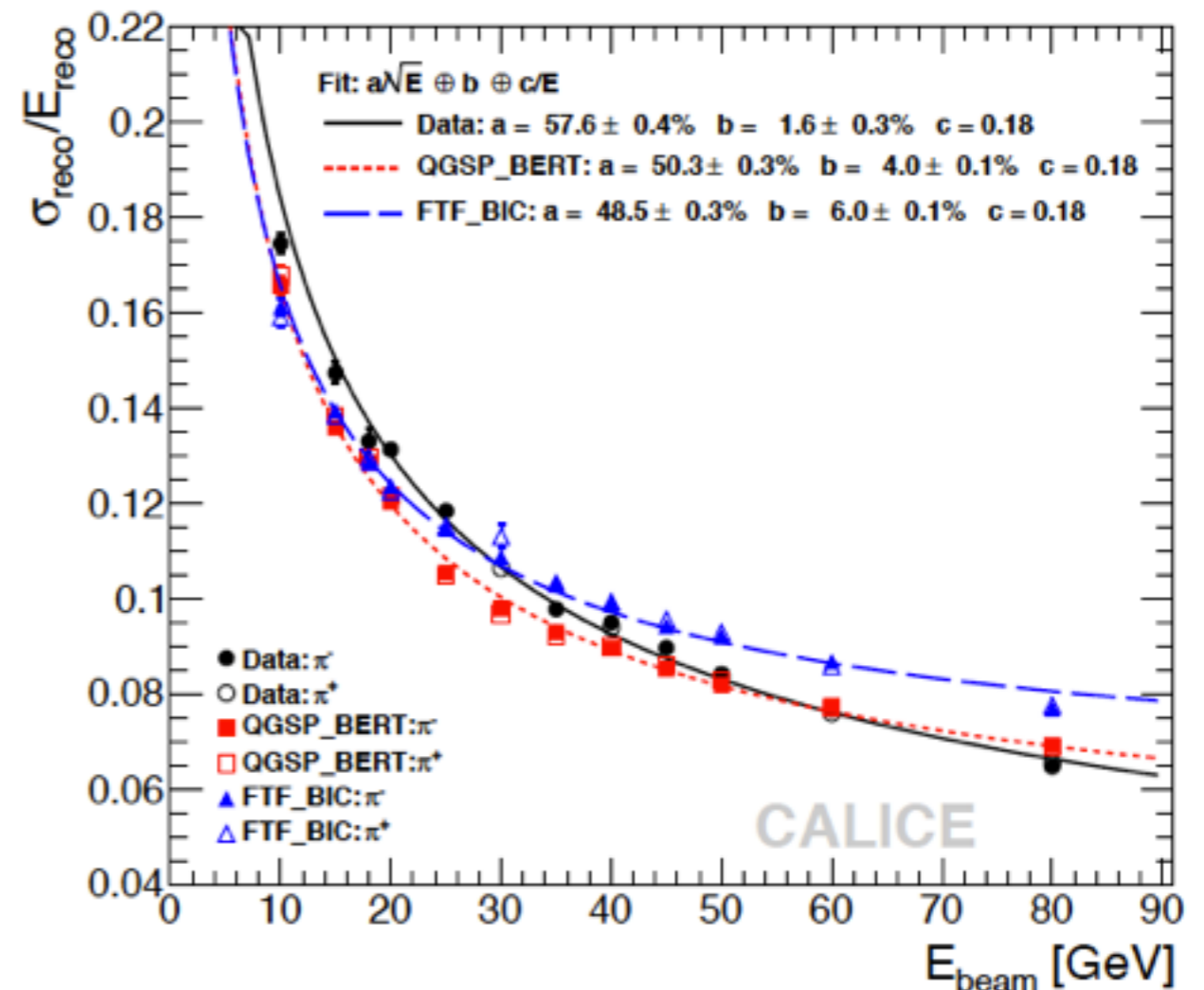
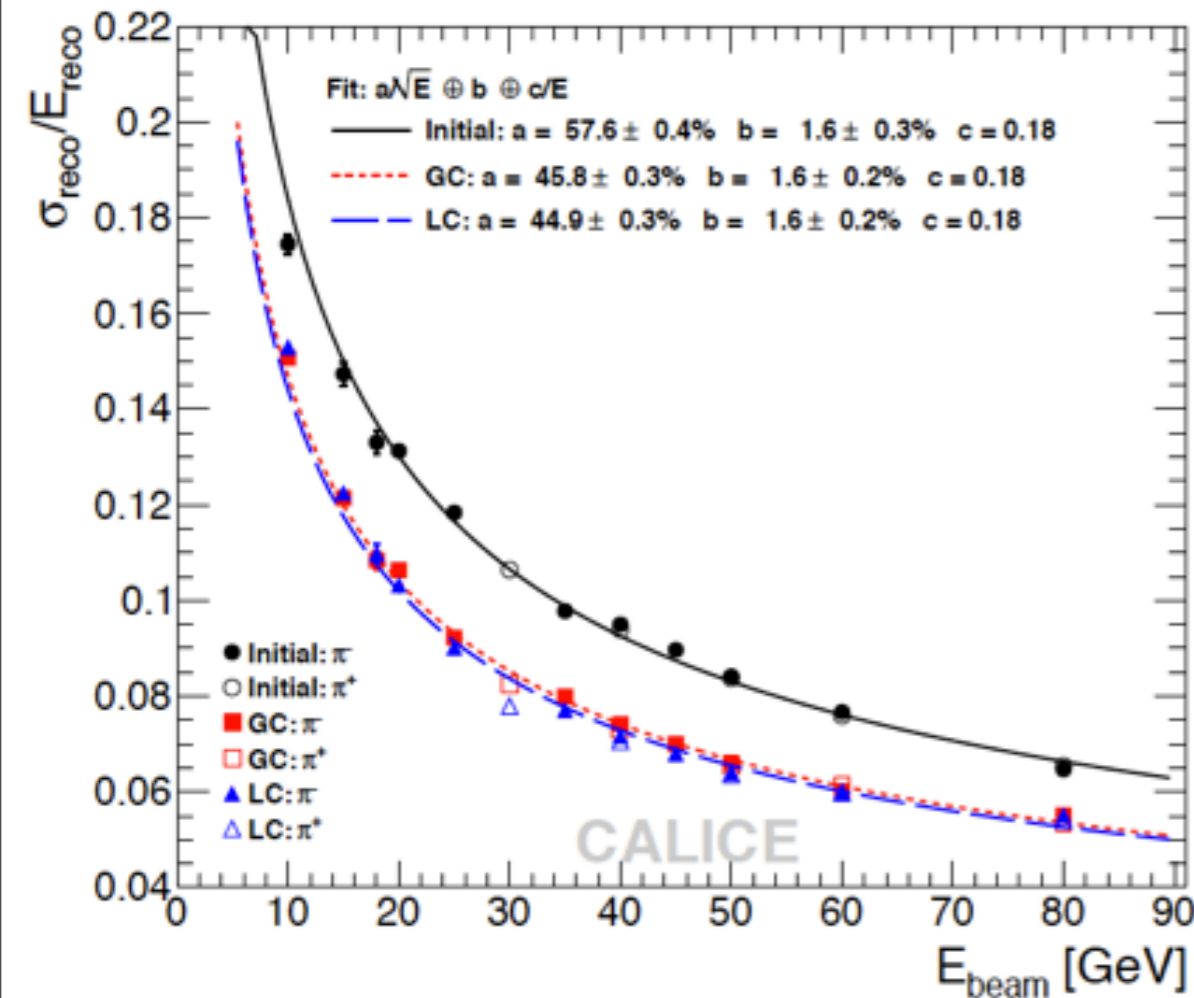
- Three papers under my responsibility at the moment:
 - AHCAL Energy Resolution and Software Compensation (Marina Chadeeva, Katja Seidel, FS)
 - Track Segments in Hadronic Showers (Lars Weuste, FS)
 - AHCAL Muon Response and Calibration Portability (Niels Feege, Erika Garutti, Marco Ramilli, FS)
- Planned for 2012:
 - Combined Energy Resolution (SiW ECAL, AHCAL, TCMT) for CERN 2007 data (FS, hopefully some help from Katja and/or Lars on data access)
Plan: Update / Finalization of CAN-015

Software Compensation Paper

- Analysis final, draft exists, text needs one thorough work-over, and then should be ready for internal board

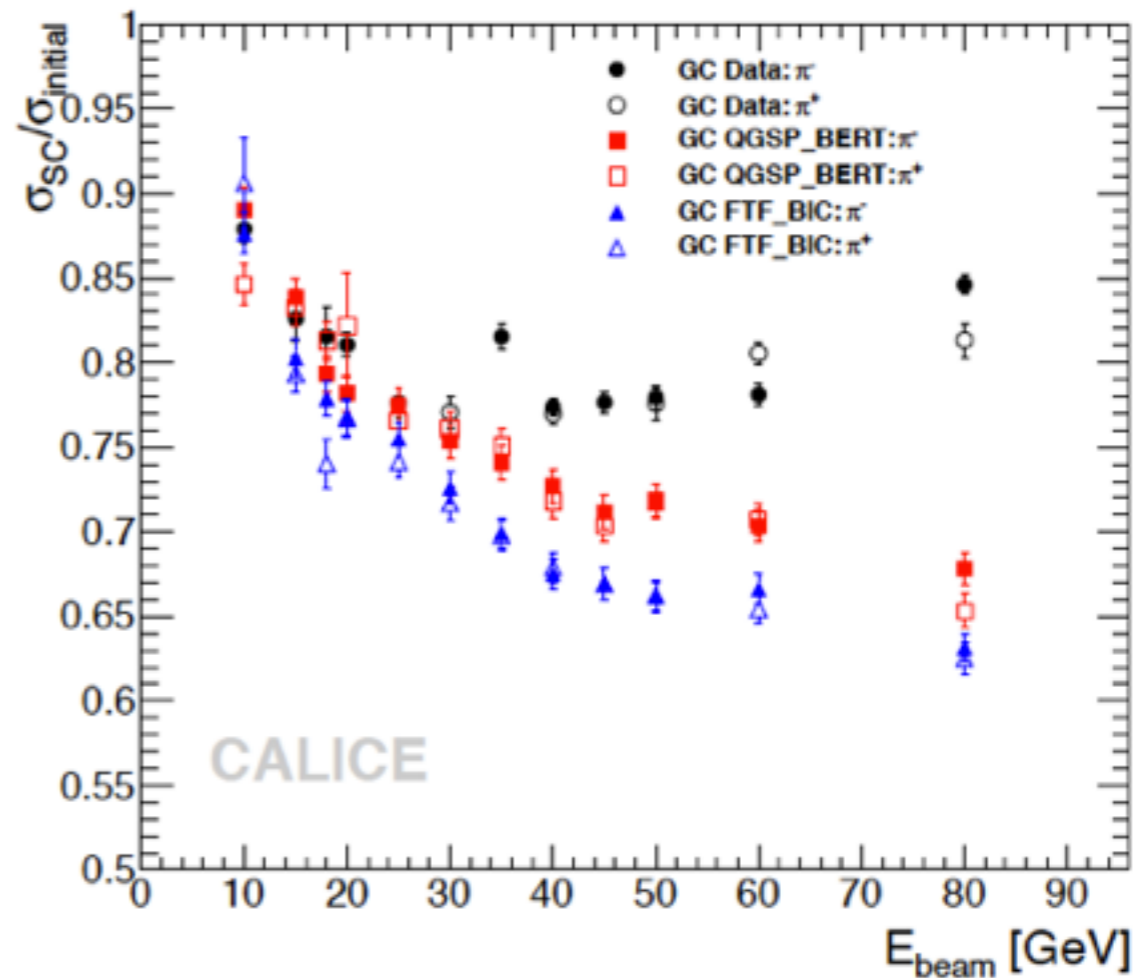
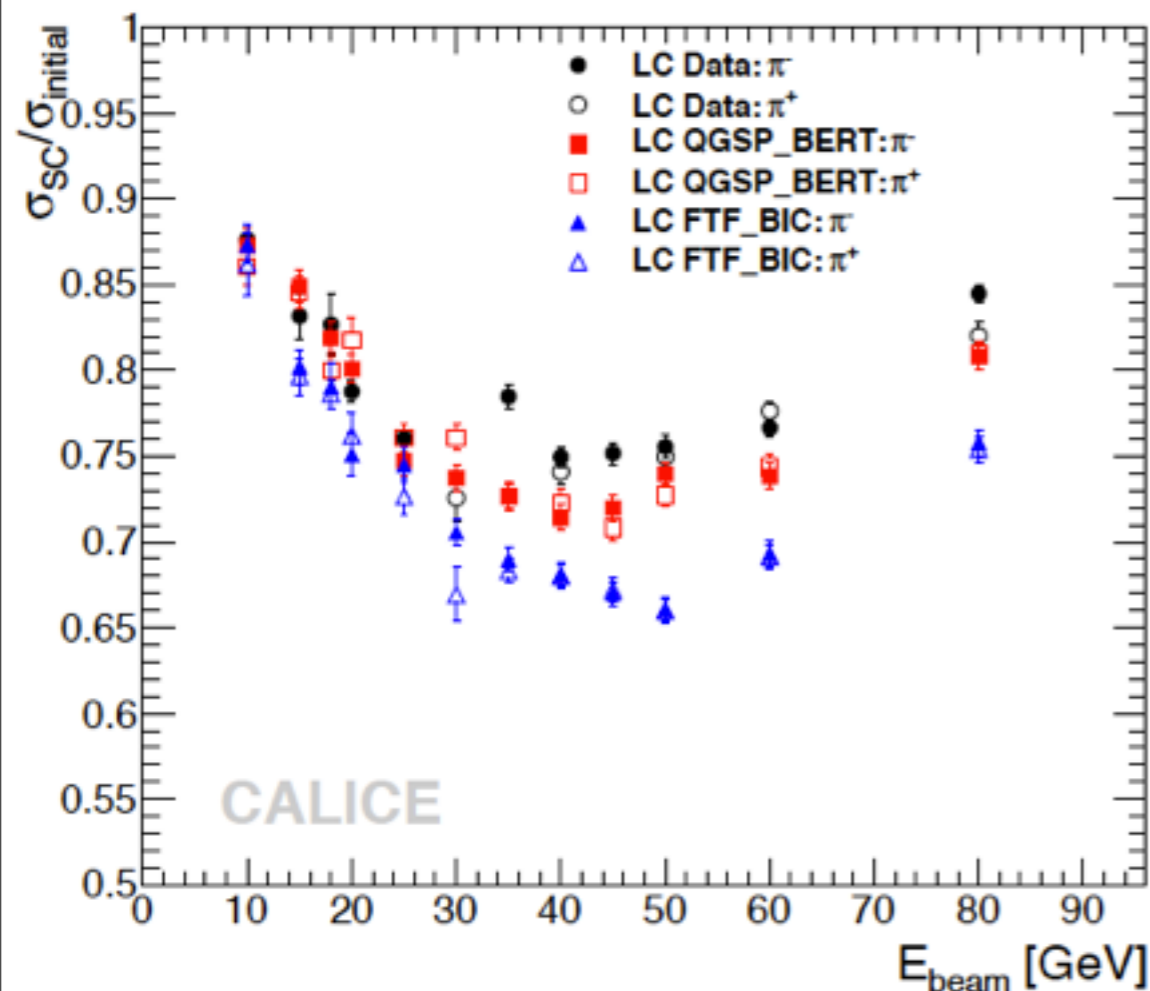
the “money plot”

comparing to MC: Geant4.9.4



Software Compensation Paper

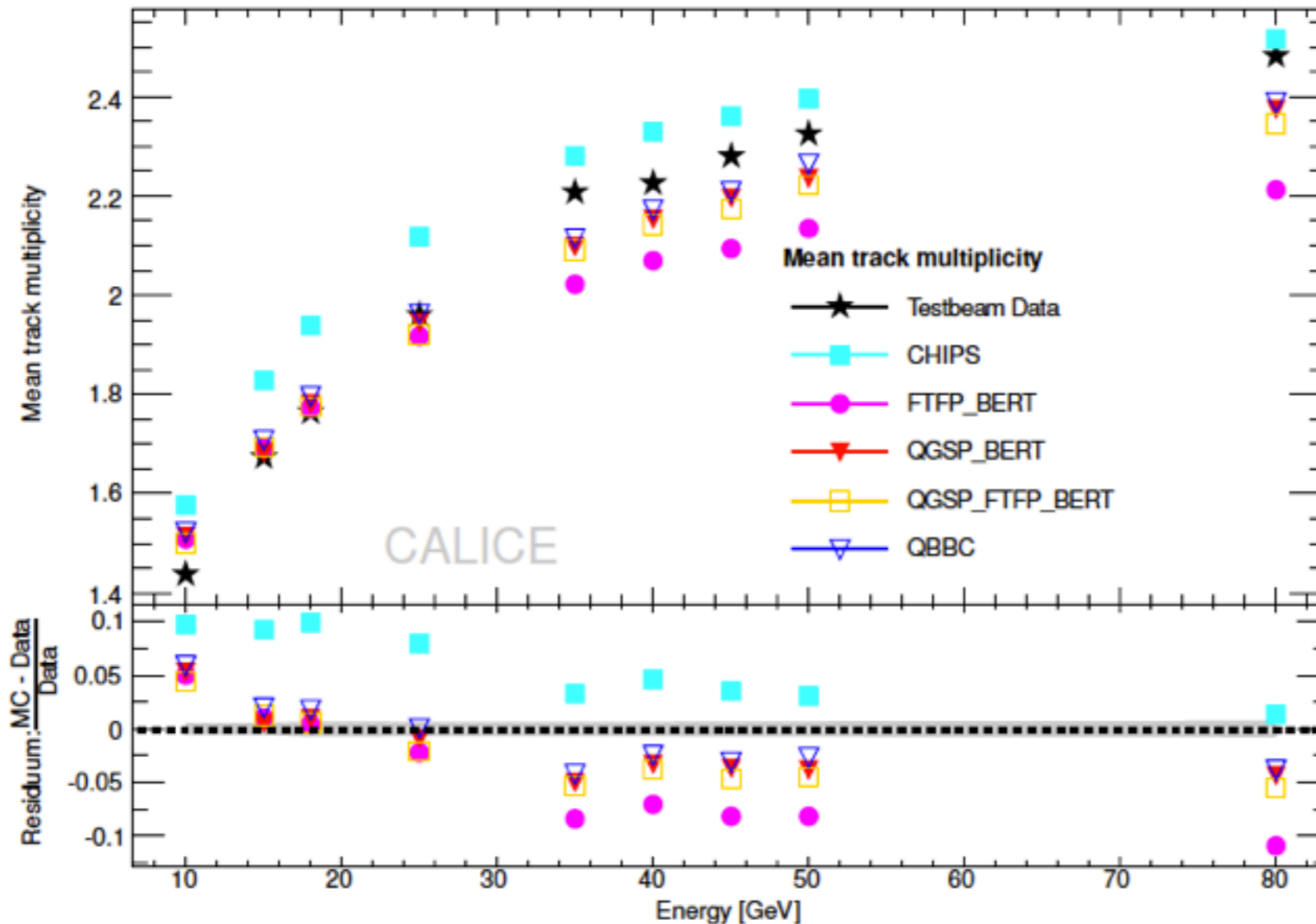
- SC in MC: Using weight factors from data on simulations



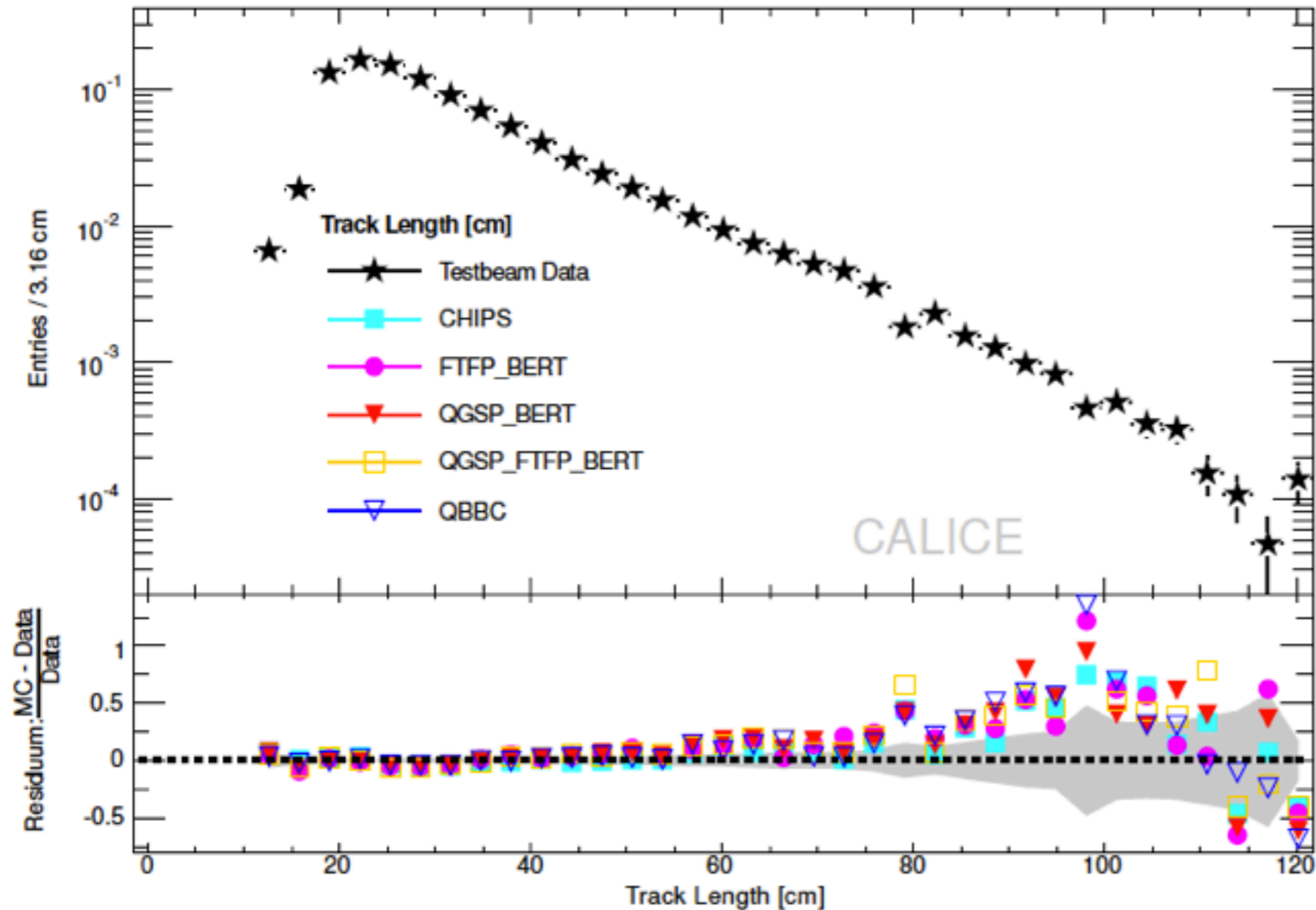
- The Plan:
 - One figure of the paper still gets exchanged (illustration of local SC)
 - Text needs quite some effort ... Should be ready early January
 - Need a review board!

Track Segment Paper

- Analysis done - complete re-analysis with latest calibration & software, MC with Geant4.9.4p02, study of systematic errors (MIP calibration, cuts, ...), influence of noise



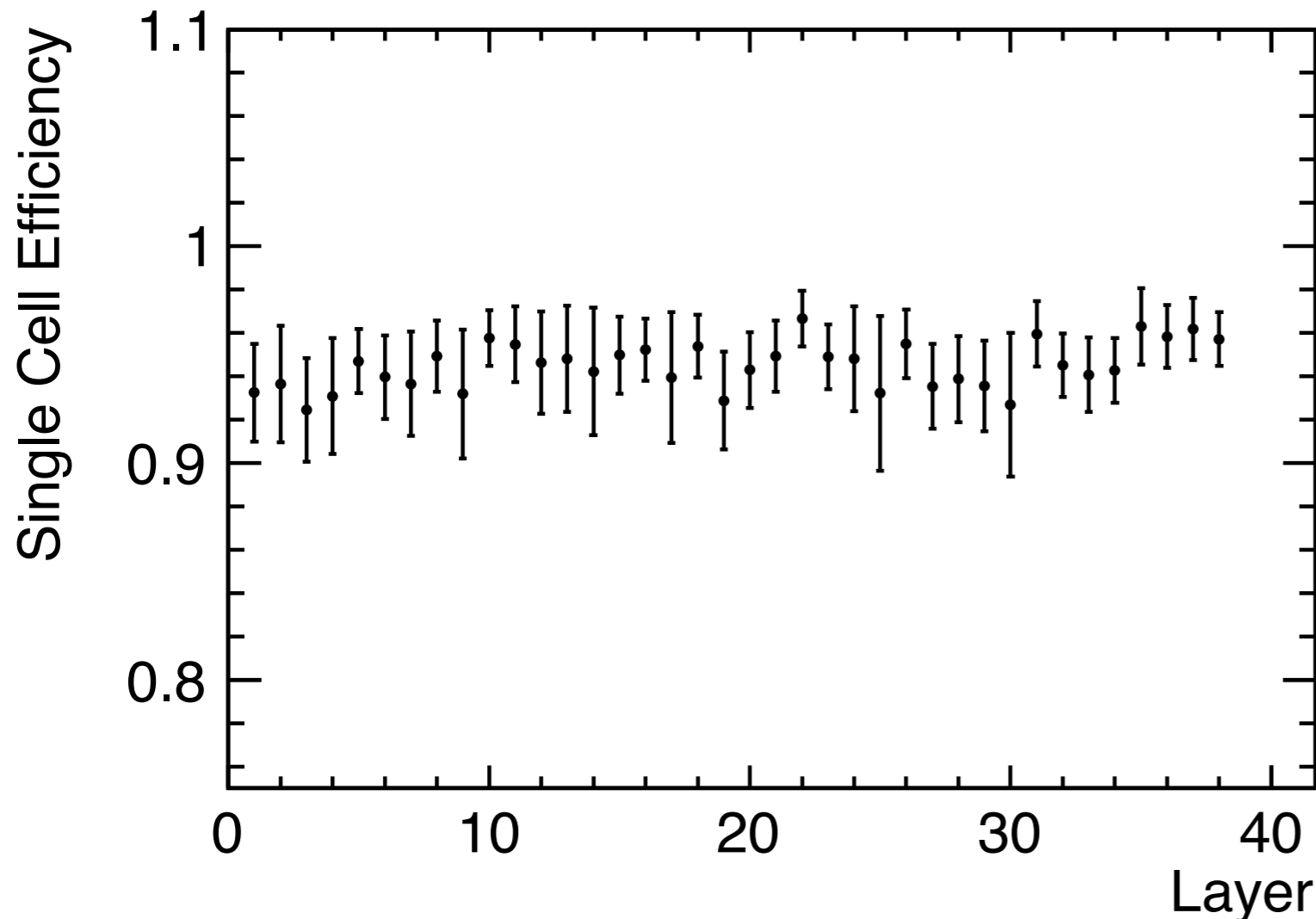
Track Segment Paper



- First draft of text exists, but still needs some work
- Some plot issues / presentation issues need to be worked out
- Ready for review board early January, hopefully

Muon Paper

- Some issues from last iteration addressed:



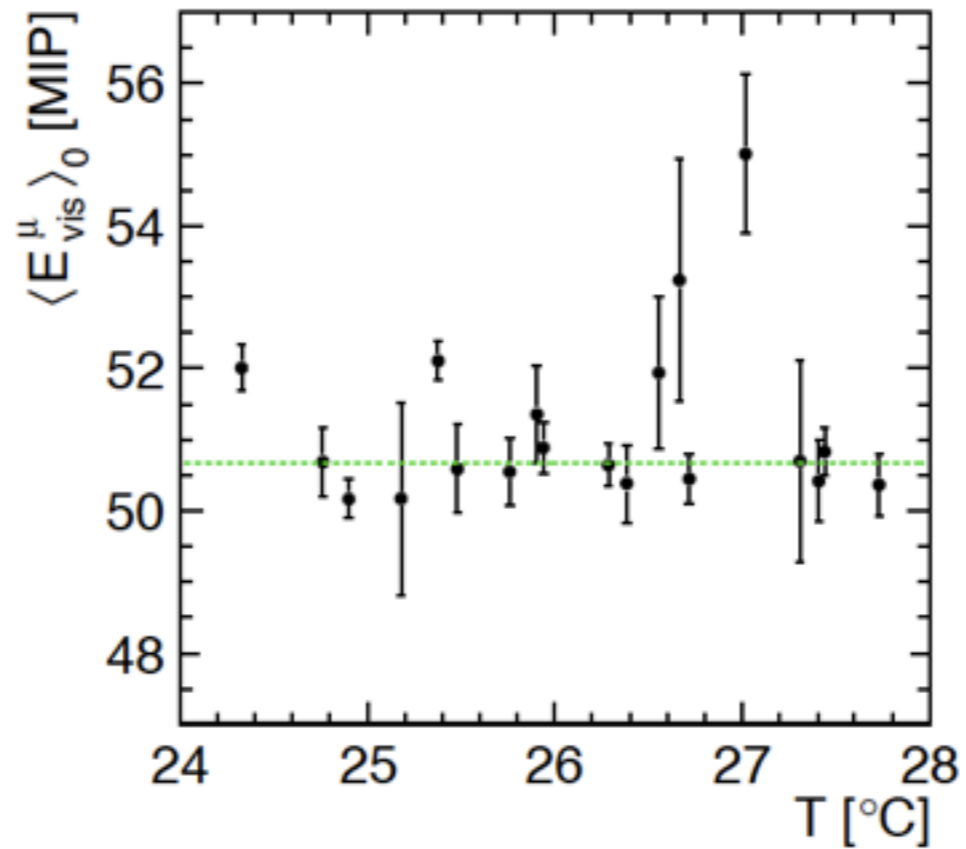
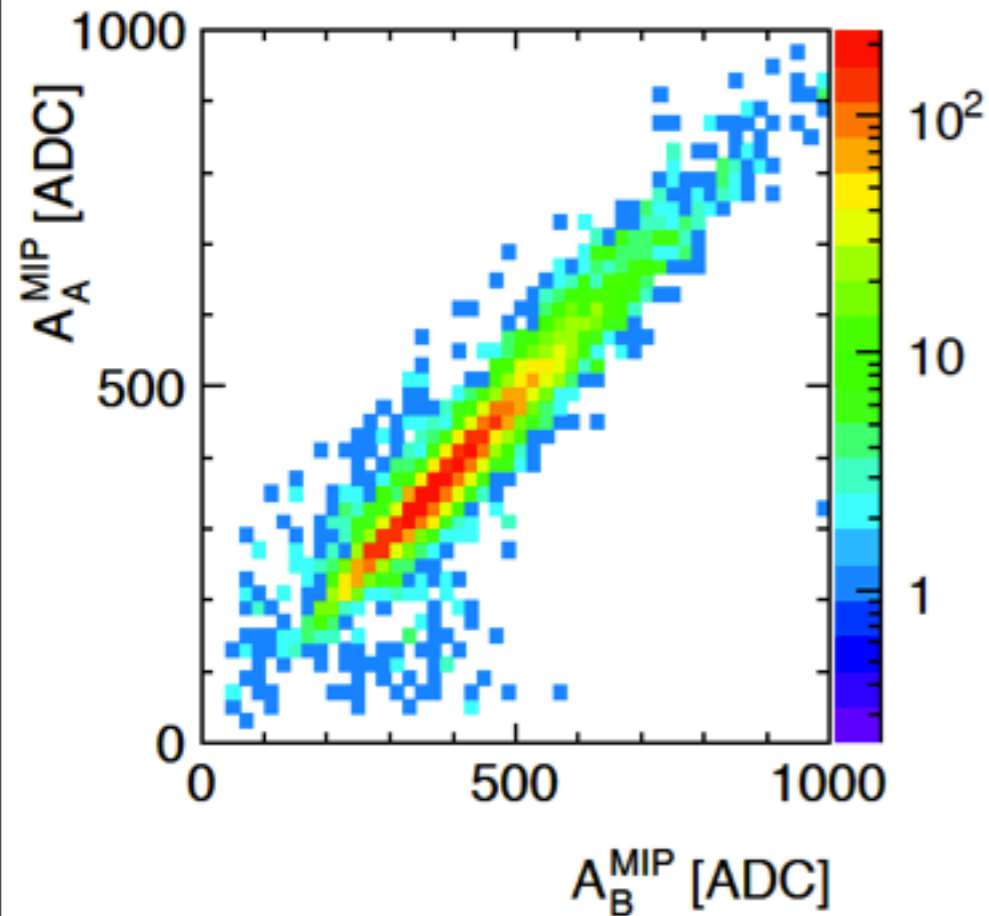
Single cell efficiency, problem at change from small to large tiles solved (now using triplet method)

But: Results currently only for CERN data (done by Andrea, not easily repeatable for FNAL)

- ... and some topics were given up:
 - energy and angular dependence of AHCAL response - in particular energy dependence measurements not sufficiently conclusive (systematics!)

Muon Paper

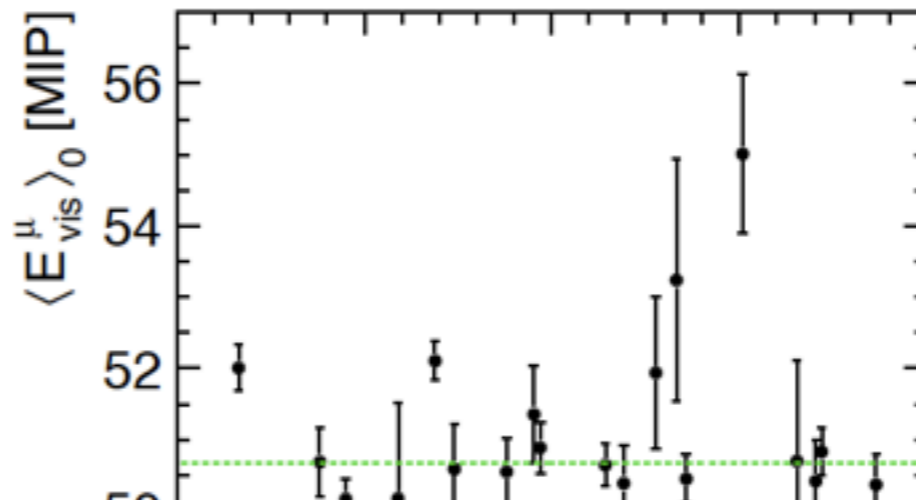
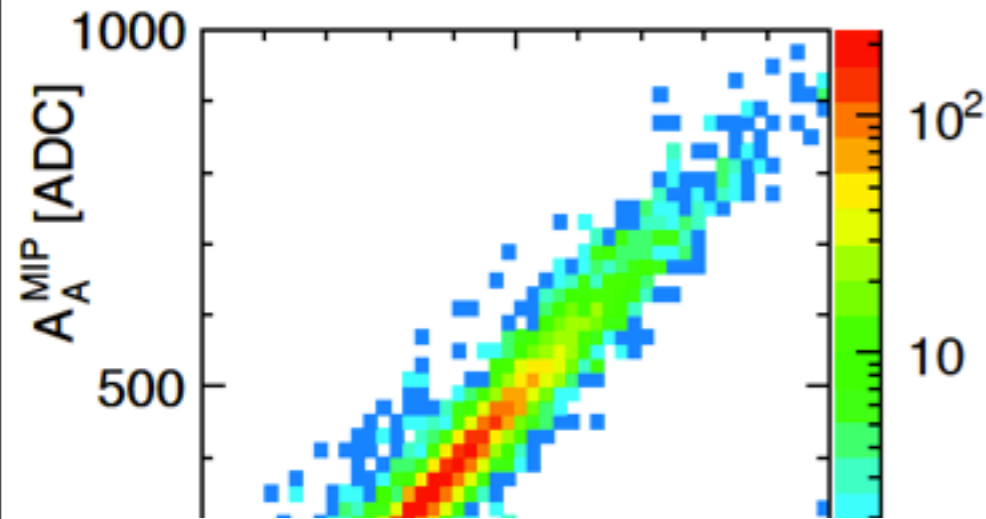
- The calibration transport story is back: Result from Nils' thesis



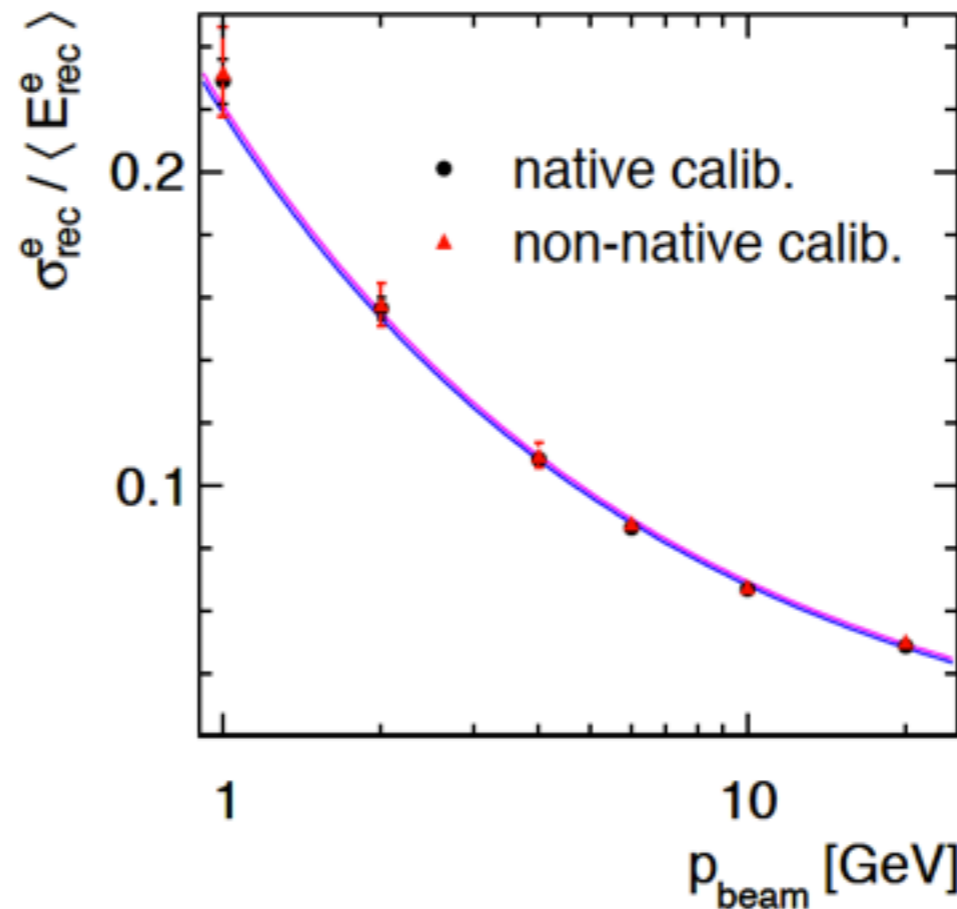
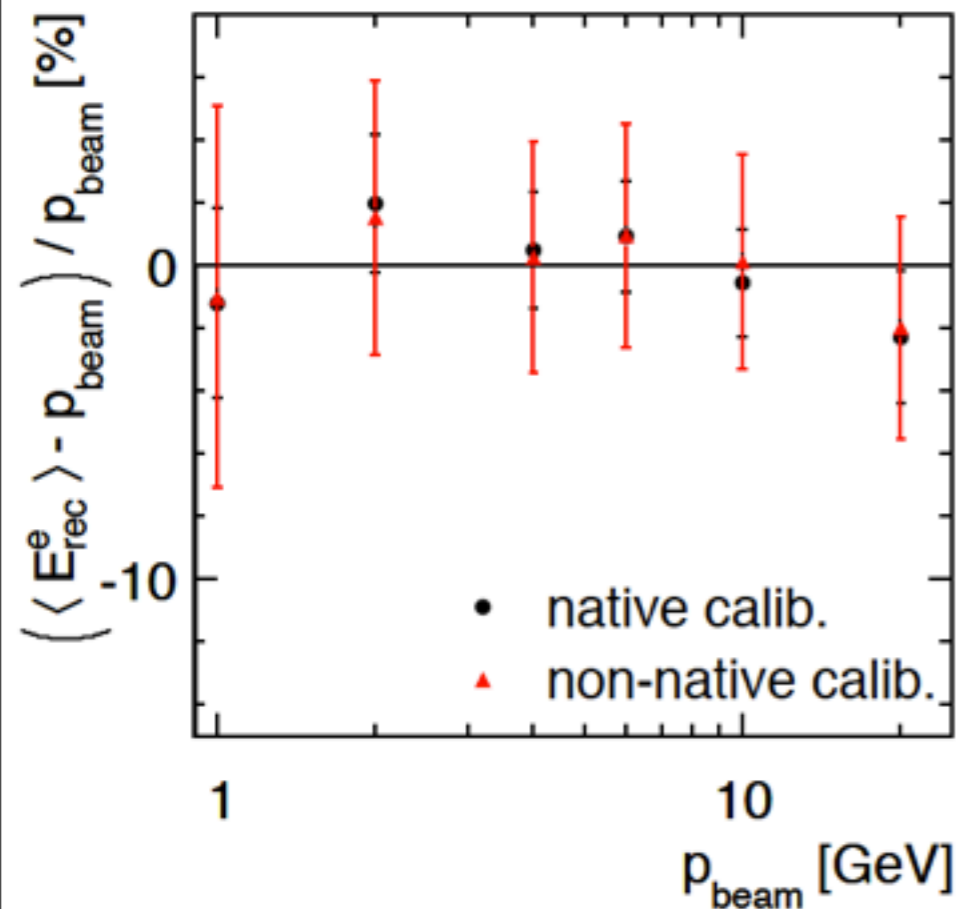
calibration constants
& temperature
correction
(demonstrated on
Muon visible energy)

Muon Paper

- The calibration transport story is back: Result from Nils' thesis

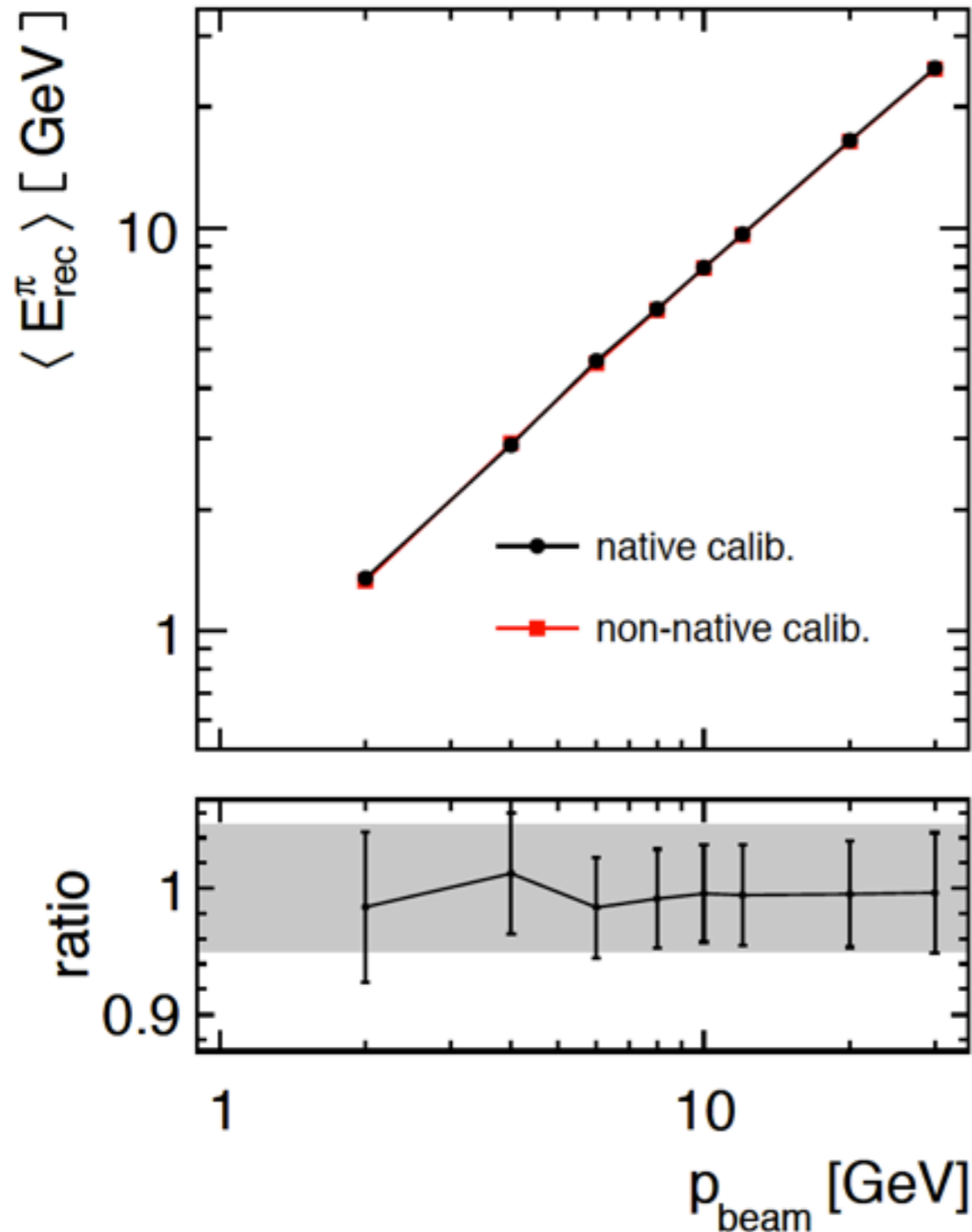


calibration constants
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(demonstrated on
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linearity and
resolution for
transported electrons

Muon Paper



- Energy sum for hadrons (on em scale) with and w/o transport
- Potential further addition: MC with non-uniformities to show muon energy distribution in MC
- The Plan:
 - Working on text, needs at least one more iteration (and input from other authors!)
 - Finalizing figures: Need to collect macros, unify style, make sure all are up to date
 - Then: Go to review board early next year...