

Tracking Paper: Discussion on physics lists

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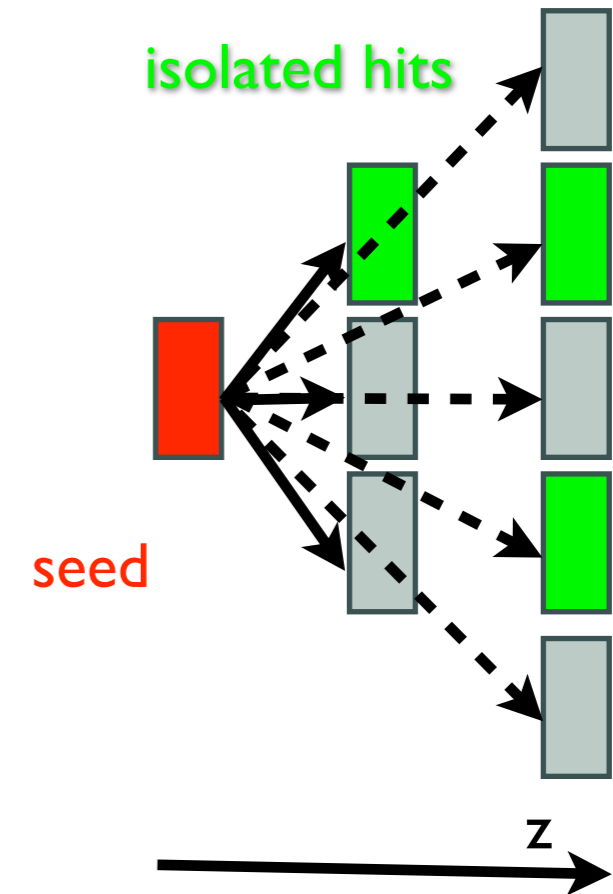
**Max Planck Institut für Physik
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München**

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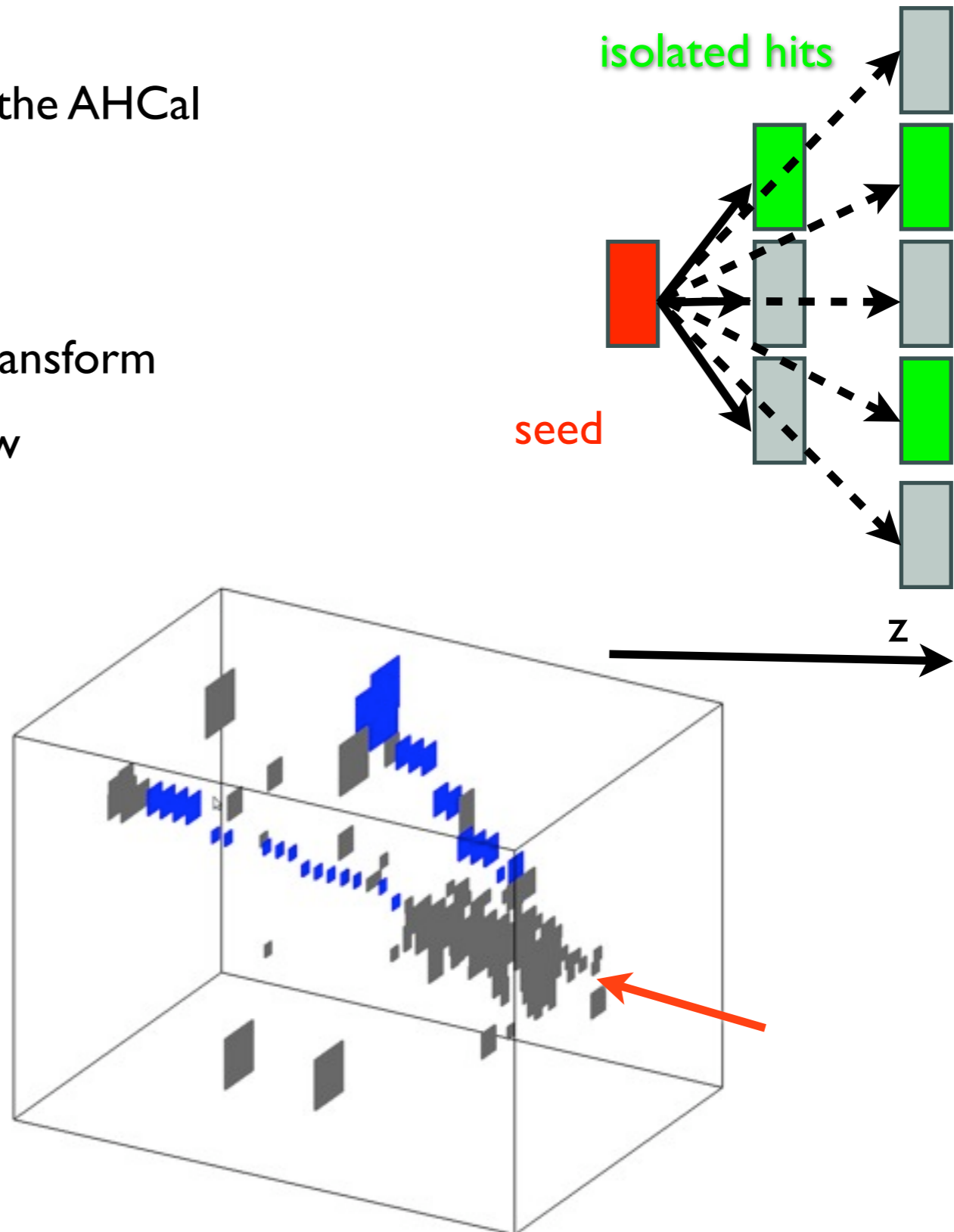
Tracking in the AHCAL

- Search for MIP like track segments in the AHCAL
 - CAN-022
 - Nearest Neighbour algorithm
 - Track/Hit filtering via 2D Hough Transform
- Paper ~ ready for first round of review
 - Main content:
 - Algorithm
 - Data \Leftrightarrow MC comparison

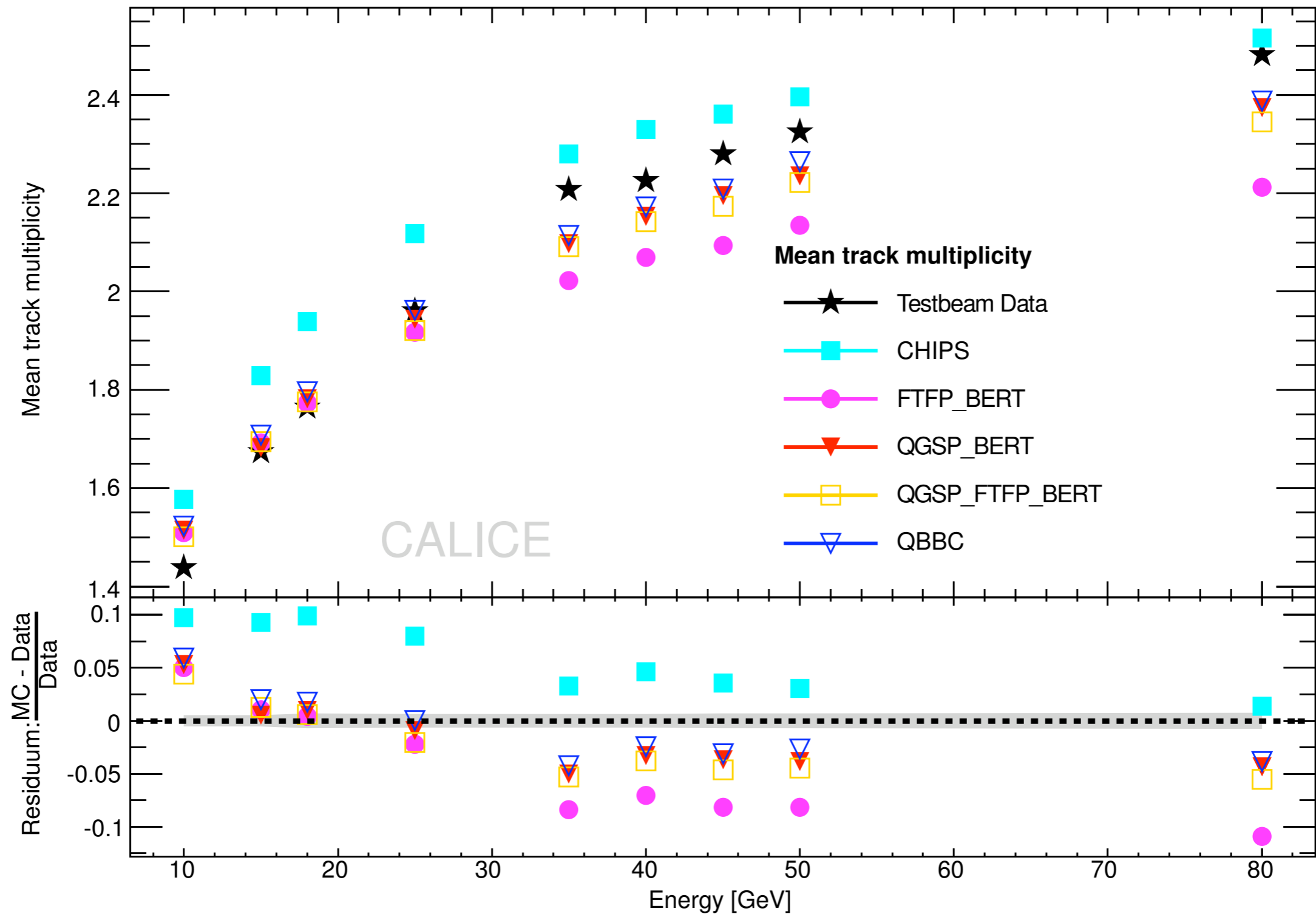


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Example results: Mean track multiplicity



Discussion: Which physics lists?

— [Simulation based on Geant4 9.4p02

— [Which physics lists should be used for comparison to Testbeam Data? (CERN-LCGAPP-2010-02)

Physics List	Models	Remark
LHEP	LEP,HEP	Parametrization to data. Old
QGSP_BERT	Bertini, LEP, QGS+Precompound	CMS,ATLAS
FTFP_BERT	Bertini, Fritiof	similar to QGSP_BERT, smoother transition
QGSP_FTFP_BERT	Bertini, FTF+Prec, QGS+Prec	replace LEP from QGSP_BERT by FTFP for transition studies
QBBC	many (based on particle, energy,..)	HP like, different neutron xs
CHIPS	CHIPS	new, one model only, own xs
FTF_BIC	Binary, Fritiof	„not recommended“ as of G4.9.3
QGS_BIC	Binary, QGS	