1. A_1^n study using double-tagging from Pol 3He
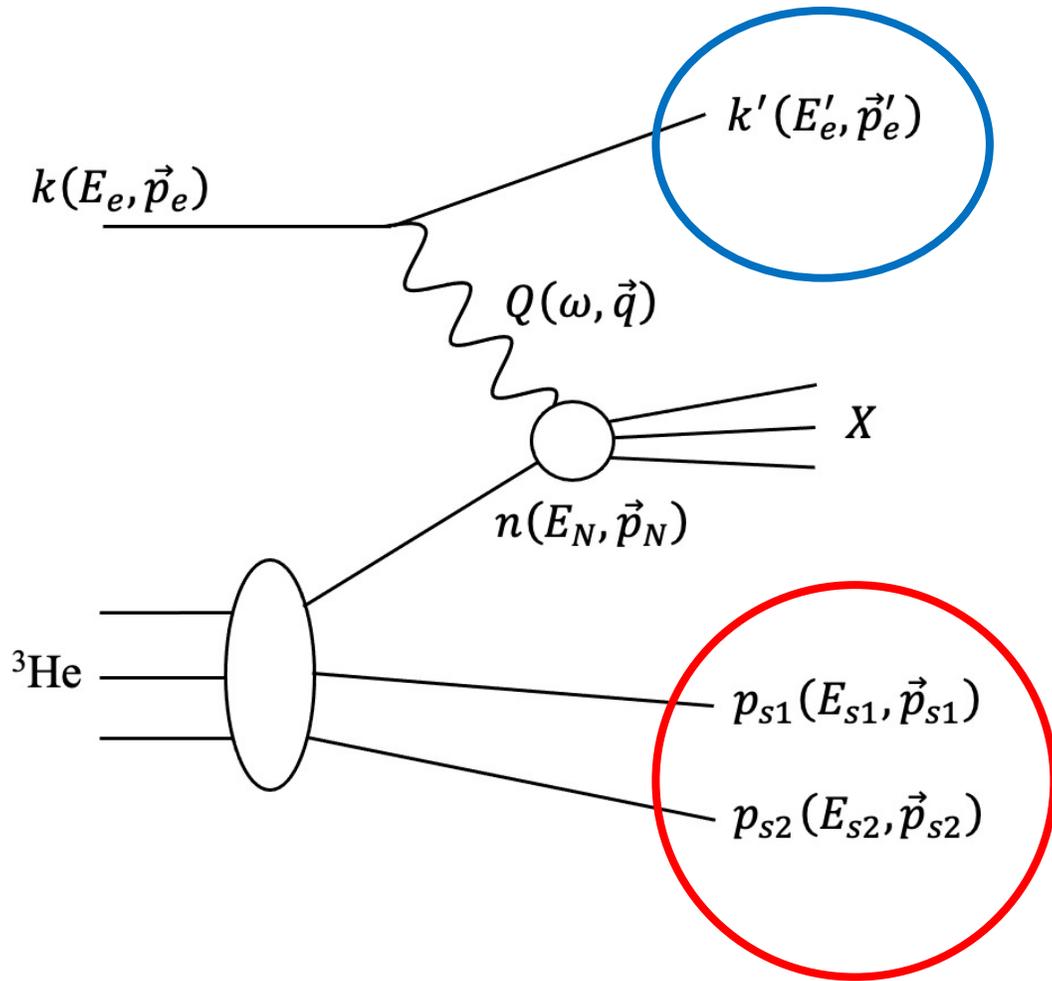
2. A_1^p study plan

Dien Nguyen

ECCE Inclusive Reaction Meeting
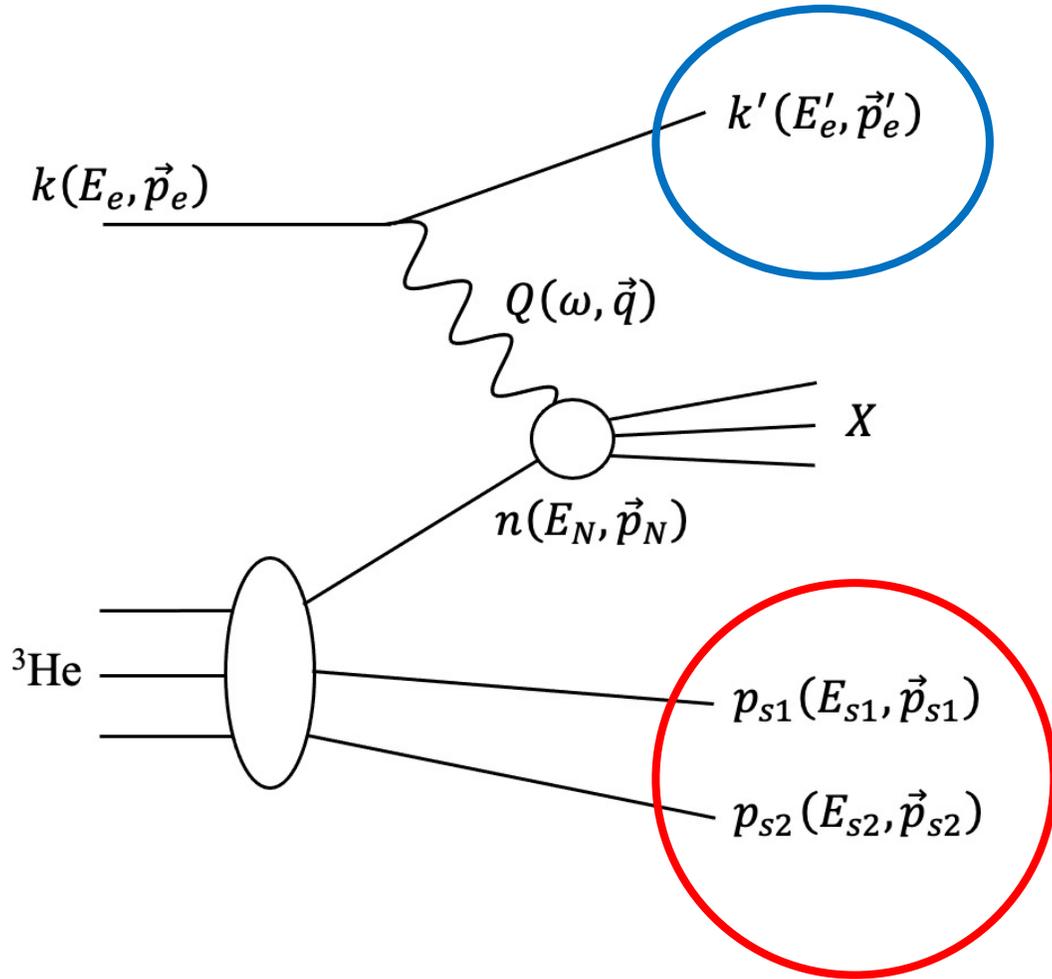07/14/2021

# 1. A_1^n: Double-spectator tagging from Pol ^{3}He

- ❑ Detect protons to ensure neutron DIS

- ❑ Reduced model dependency

- ❑ Possible with EIC Far-forward detector
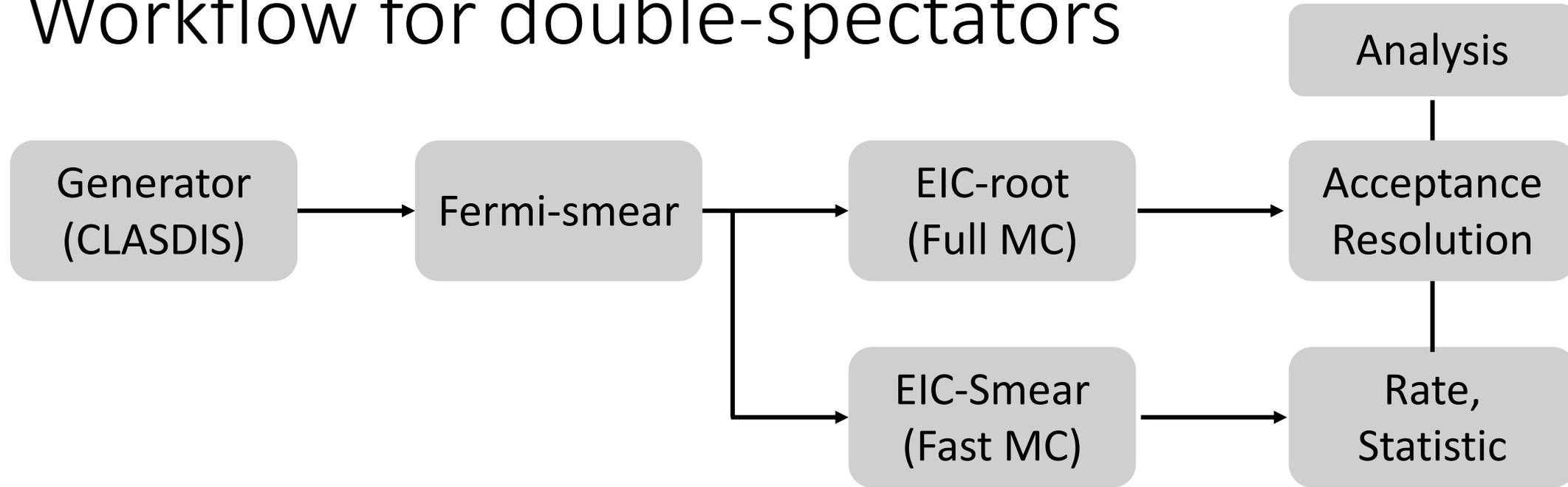
1. A_1^n: Double-spectator tagging from Pol 3He

$k(E_e, \vec{p}_e)$

$k'(E_e', \vec{p}_e')$

$Q(\omega, \vec{q})$

X

$n(E_N, \vec{p}_N)$

^{3}He

$p_{s1}(E_{s1}, \vec{p}_{s1})$

$p_{s2}(E_{s2}, \vec{p}_{s2})$

❑ Magnetic field separates proton from Ion beam

❑ Proton: B0 tracker, Off-Momentum detector and Roman pots

Off-Momentum Detectors

EIC Far-Forward Detection Region

Roman Pots

p

B0

Beam Pipe

ZDC
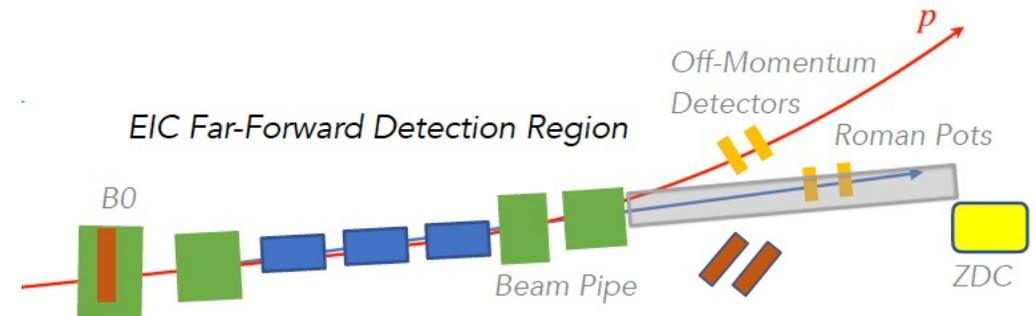
Yellow report section: 11.6

arXiv: 2103.05419v2

Workflow for double-spectators
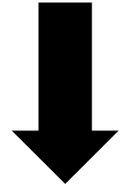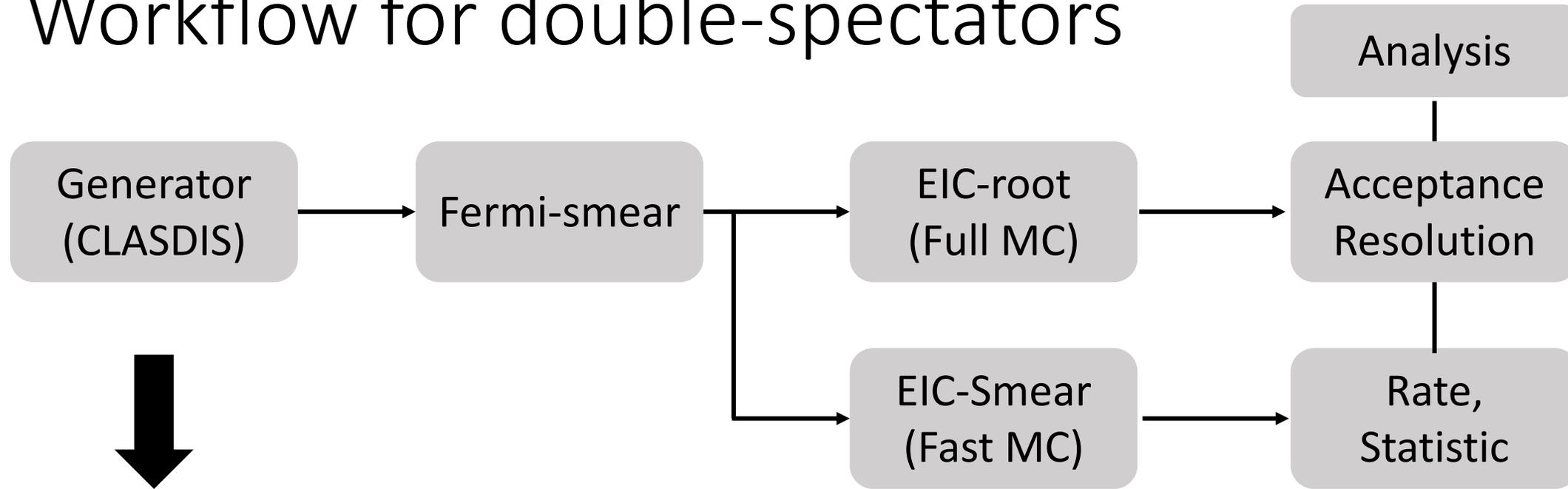
Workflow for double-spectators
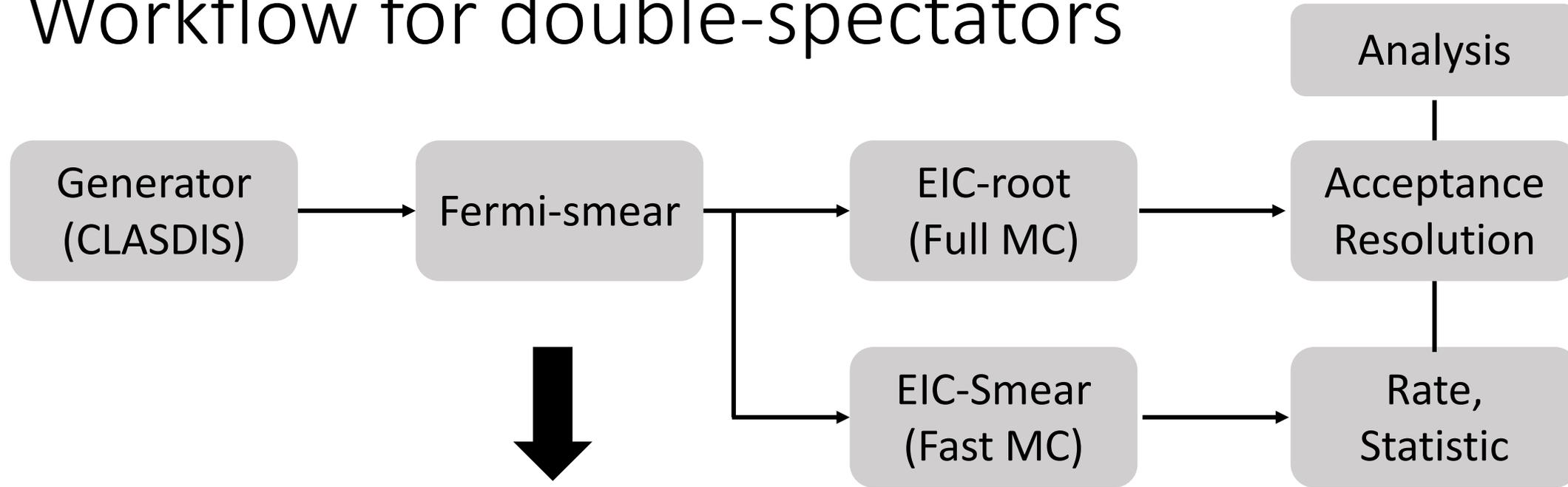
Workflow for double-spectators

DIS: Electron Kinematic

eN: 5x41 GeV

eN: 18x110 GeV
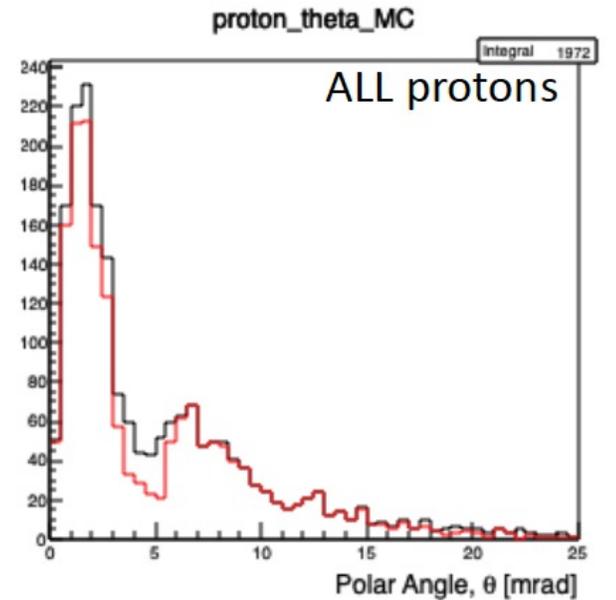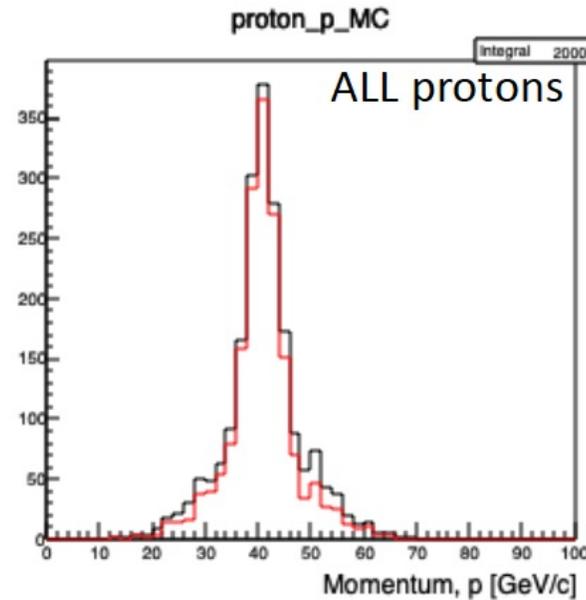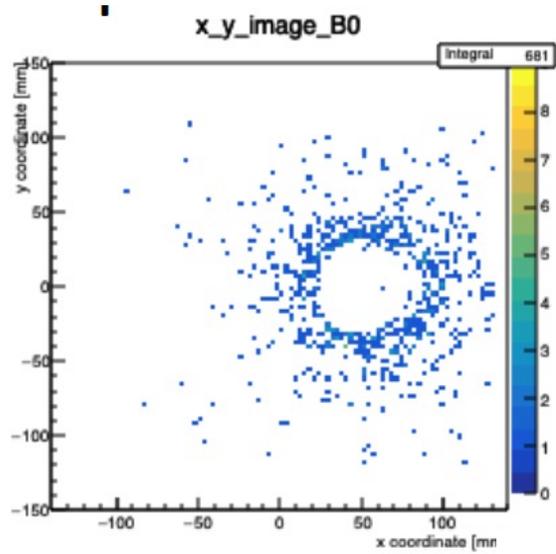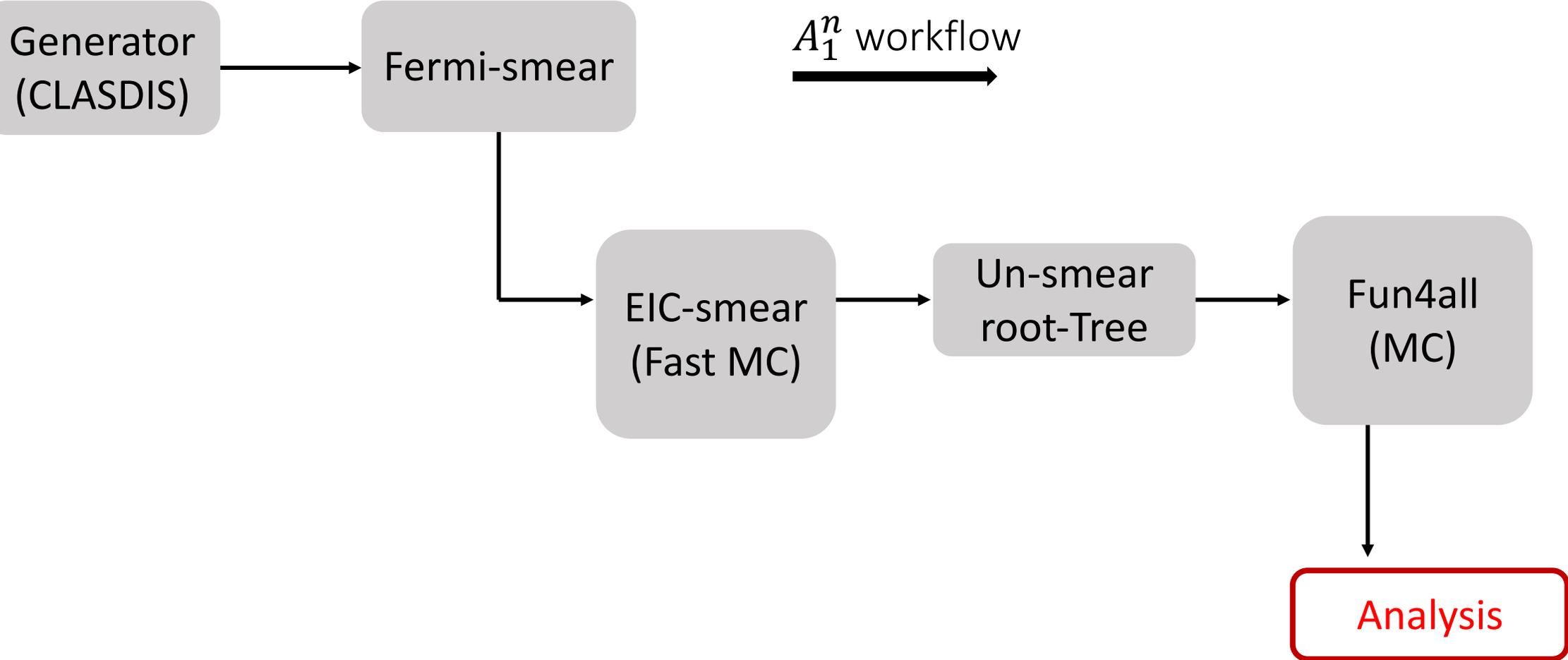

Plots from I. Ivica
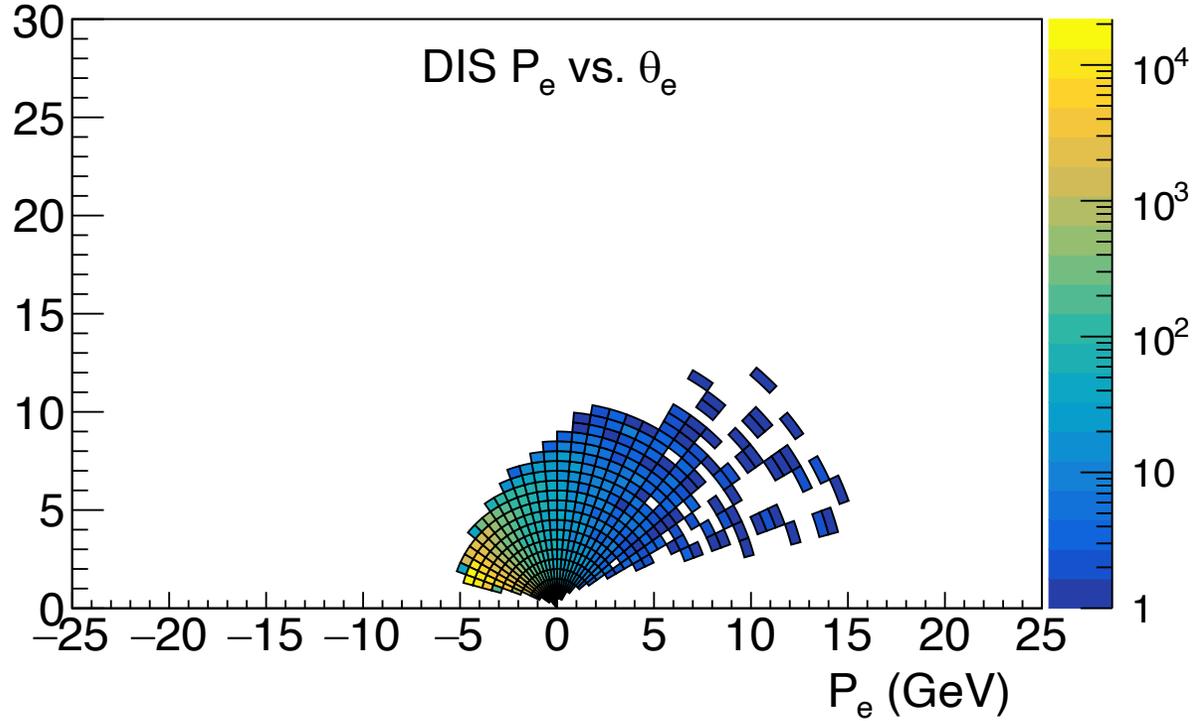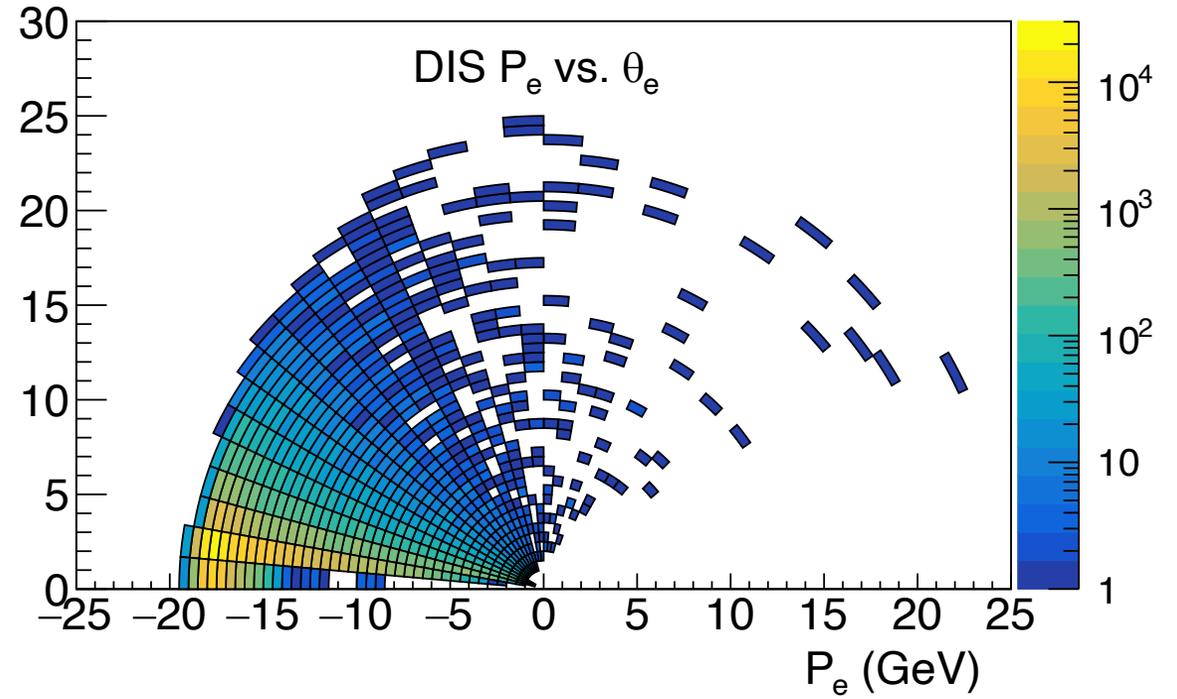
Spectator protons Kinematic

eN: 5x41 GeV

Plots from I. Ivica
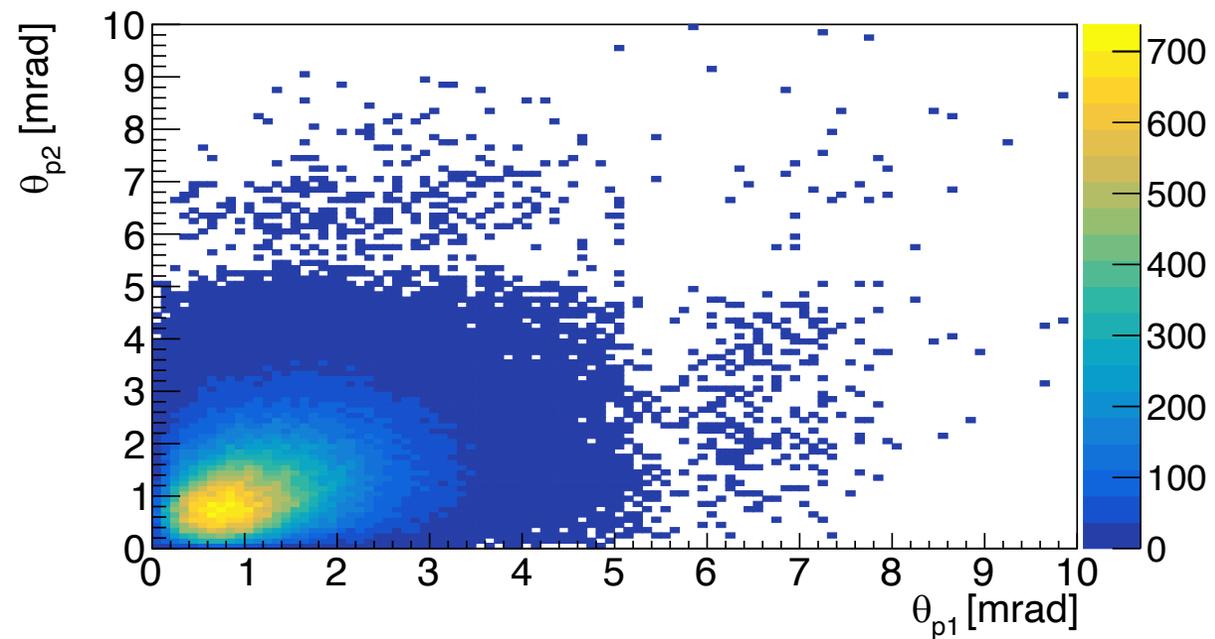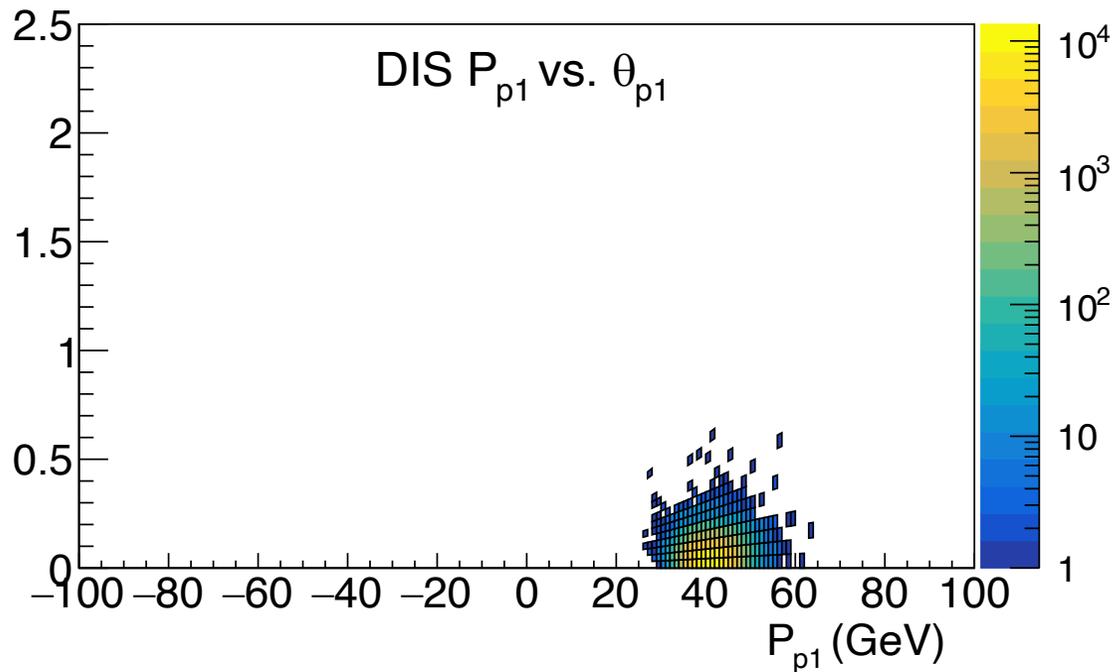
Spectator protons distributions, acceptance
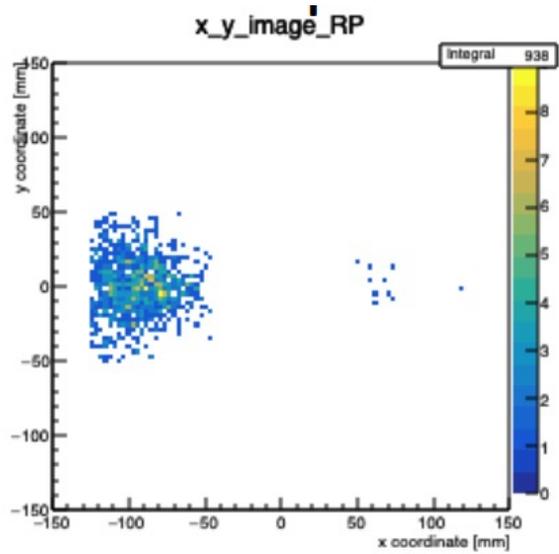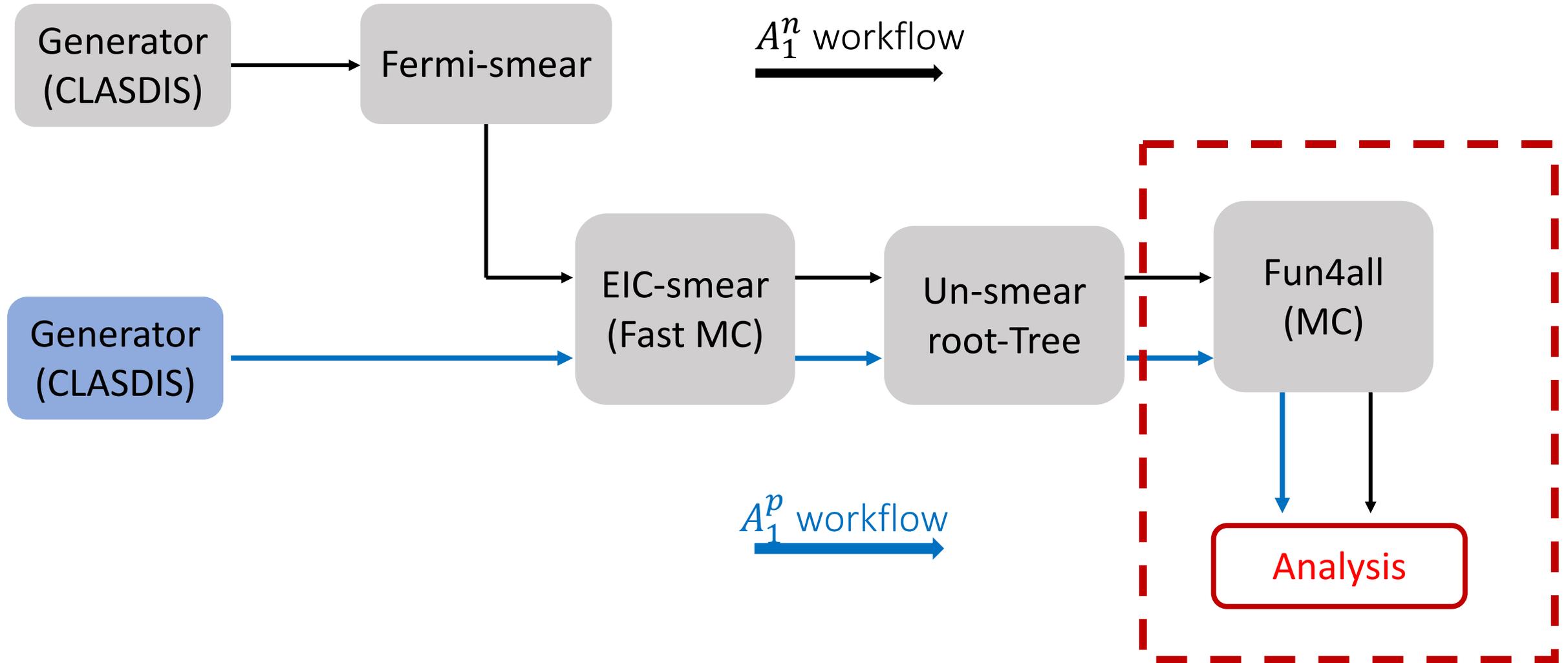

Plots from A. Jentsch

Moving to Fun4all for ECCE

2. A_1^p Study plan: Moving to Fun4all for ECCE
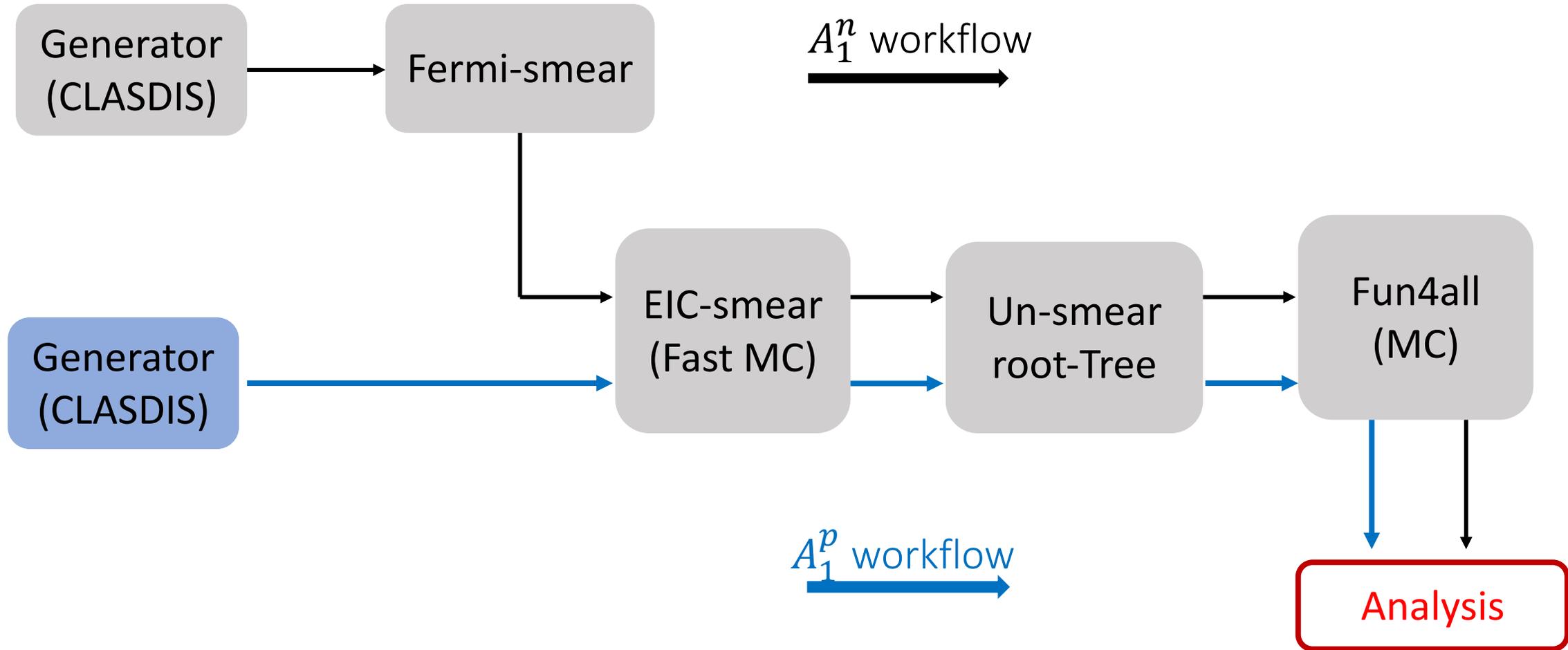
2. A_1^p Study plan: Moving to Fun4all for ECCE

Path Moving forward

❑ Have the Fun4all output for A1n sample

❑ Building analysis work-frame which can work for both A1n, A1p

❑ Create A1p sample to test analysis work-frame

❑ Full production for both A1n and A1p

❑ Analysis and produce results

Notes:

- Using the same generator for consistency

- CLASDIS generator the final state particles

 => Can be used for different reconstruction method: Double Angle and JB