MarlinTPC Digitisation

Simulation and digitisation

- Adapted processors from "TPCGemSimulation"
  (where only the gas amplification processor is really GEM specific)

Features:

- Very detailed simulation on single electron basis
  (also possible: Mokka hits)
- Realistic event pile-up using voxel map
- Calculation of charge build-up from backdrifting ions (ion disc)
- Calculation of E-Field distortions from backdrifting and primary ions
- Drift in inhomogeneous E-Field using Runge-Kutta-Solver
- Digitisation for pads (without resistive foil) and TimePix

Status

- Ready to use in Thorsten Krautscheids branch
- Tidy up the code and merge into trunk
- Revisit repository structure to have this sim/digi and TPCCloudSimulation

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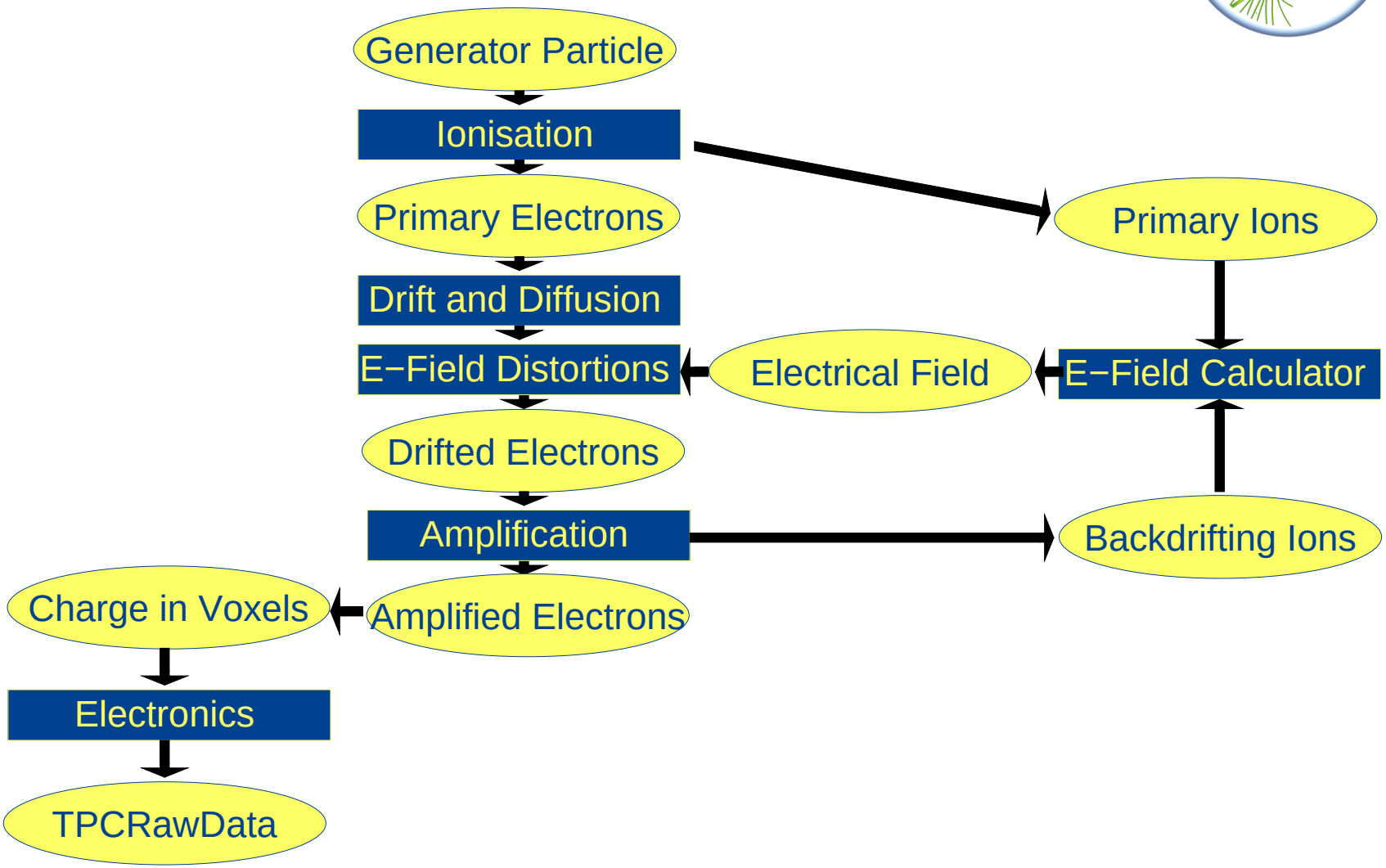
Overview


Generator Particle
Ionisation
Primary Electrons
Drift and Diffusion
E−Field Distortions
Drifted Electrons
Amplification
Amplified Electrons
Charge in Voxels
Electronics
TPCRawData
Primary Ions
Electrical Field
E−Field Calculator
Backdrifting Ions