

MC/ data comparison using a ^{60}Co γ -source

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60Co source - characteristics

Co-60 gamma source :

- Activity of 7.3 kBq
- Main peaks at 1.173 and 1.333 MeV

Calibration position :

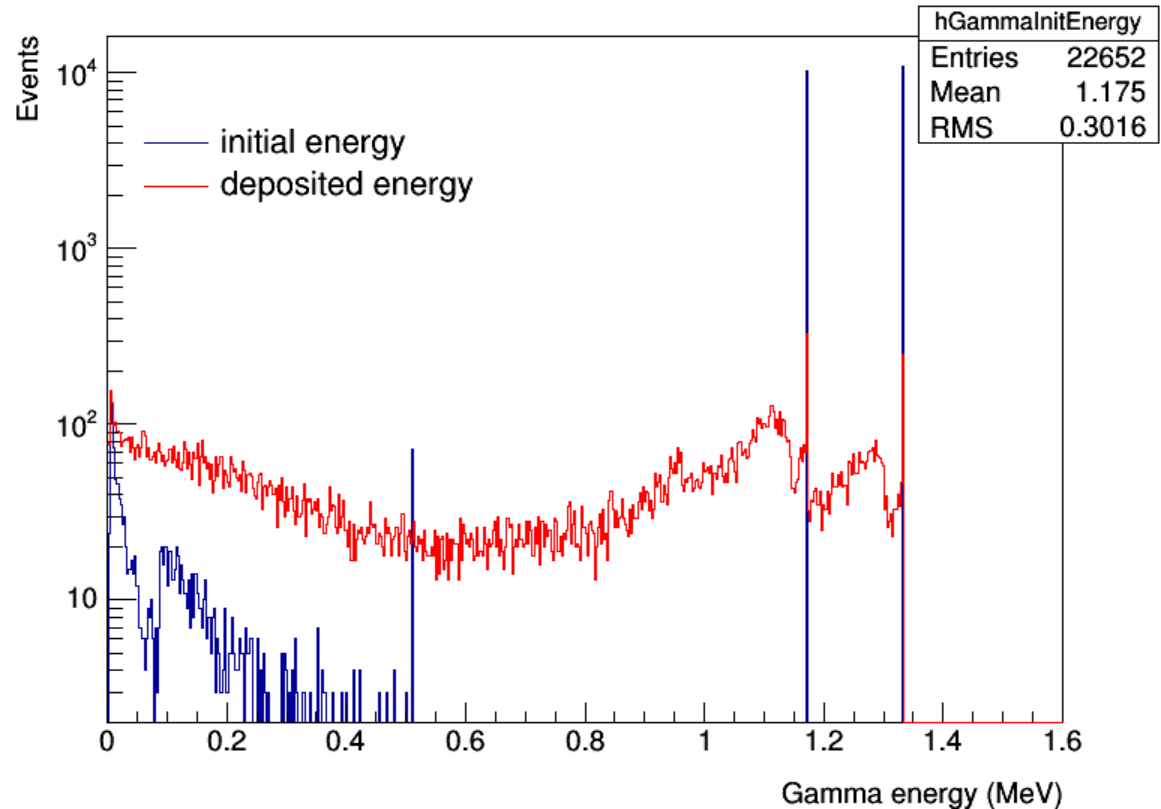
- Pos 1 : 50 cm in front of detector, towards reactor wall
- Pos 2 : 50 cm from back of the detector, away from reactor wall

Calibration runs :

- 22 – 24 april 2015

→ pure 'EM'-like samples
→ 'low'-end of energy range
(↔ muons)

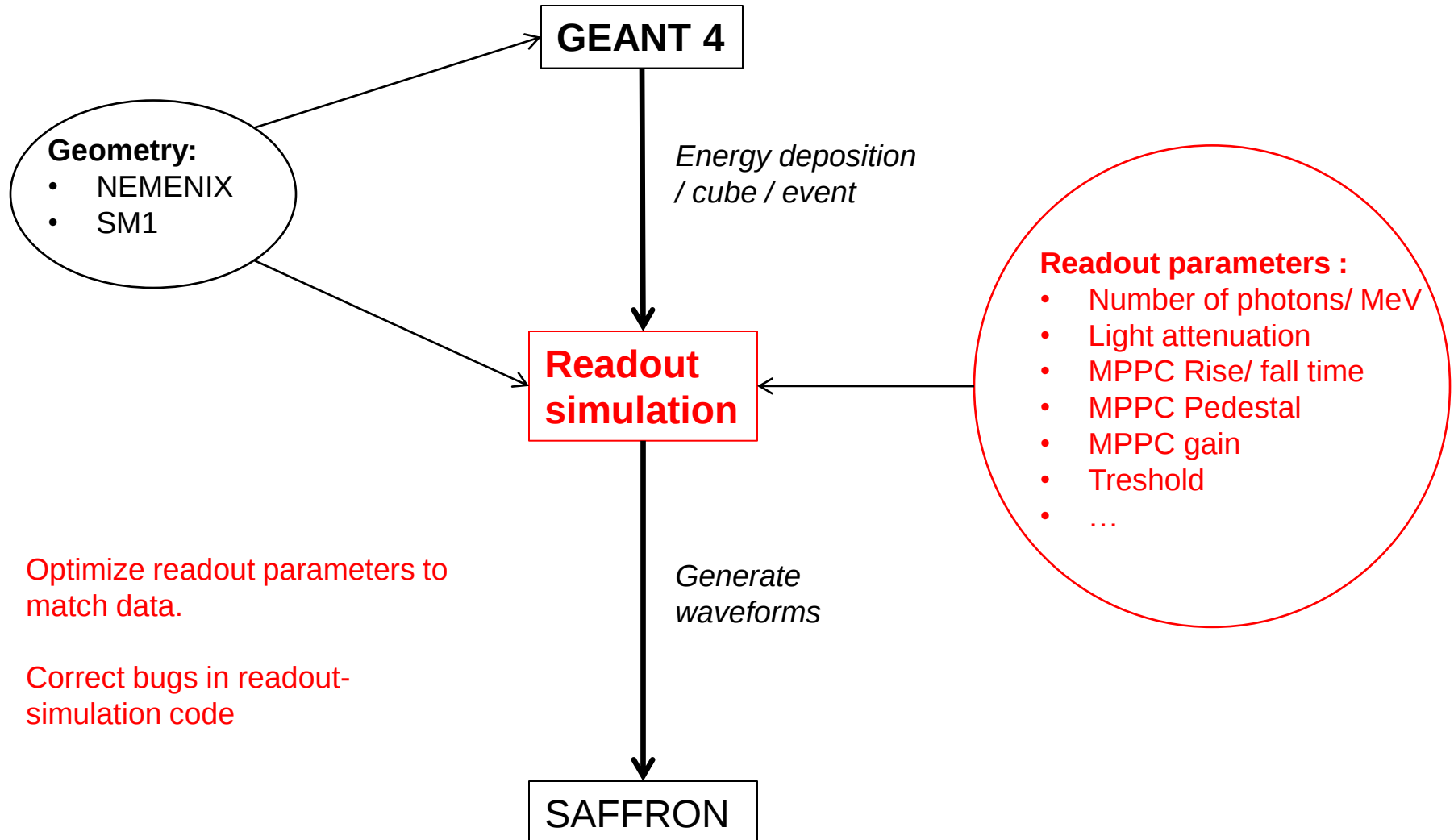
Gammas initial & deposited energy distributions



GEANT 4 simulation (no energy cuts – source at Pos 1)

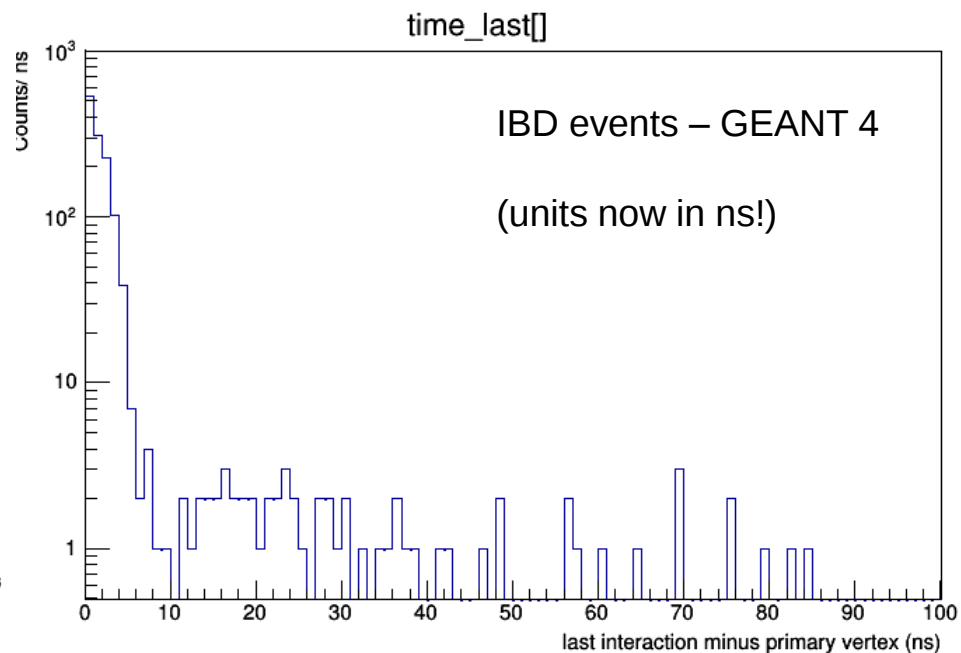
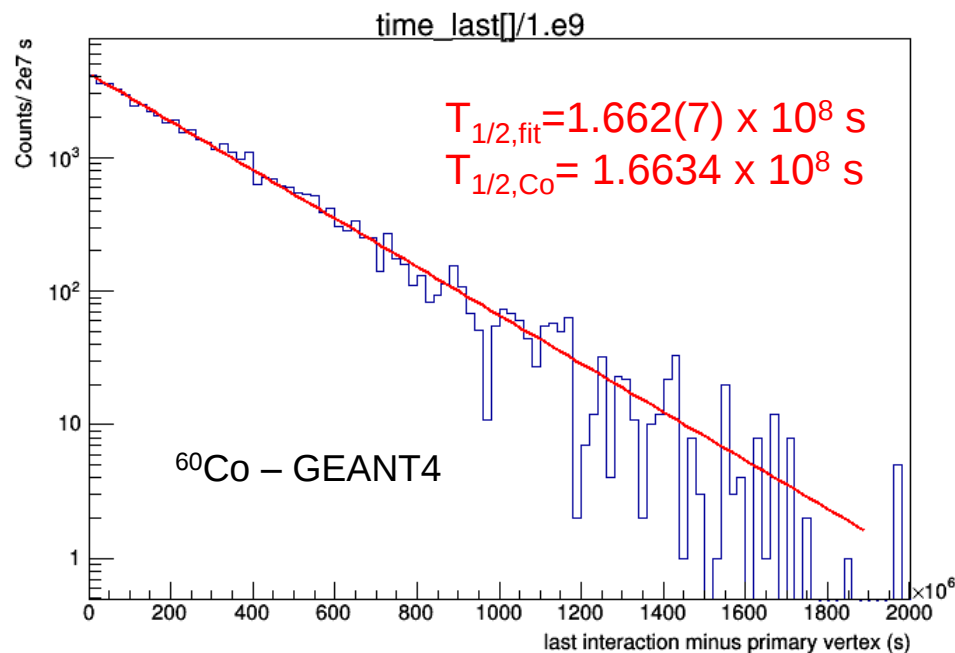
Plot from Ibrahim, internal report

Aim of the analysis



First tests with readout simulation

- No output generated on first test using Co60 simulation as input ??
→ (Jaewon) due to time difference between primary vertex and energy deposition



- 'Temporary' fix of the problem (by Jaewon).
- Need for 'elegant' solution?!
e.g incorporate option "-- decay" when running ./ReadoutSim
(also needed for ^{252}Cf and AmBe data)

1. Book-keeping of ^{60}Co data runs
 - Position of source
 - Detector configuration (gain settings, shielding,...)
2. Data/ MC comparison by analyzing waveform:
 - rise/ fall time
 - Amplitude
 - Integral
 - Treshold
 - ...
3. Adjust parameters from read-out simulation
 - *Which parameters are adjustable / fixed ?*
4. investigate other data sets : muons, ^{252}Cf , AmBe (neutron pulses)



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