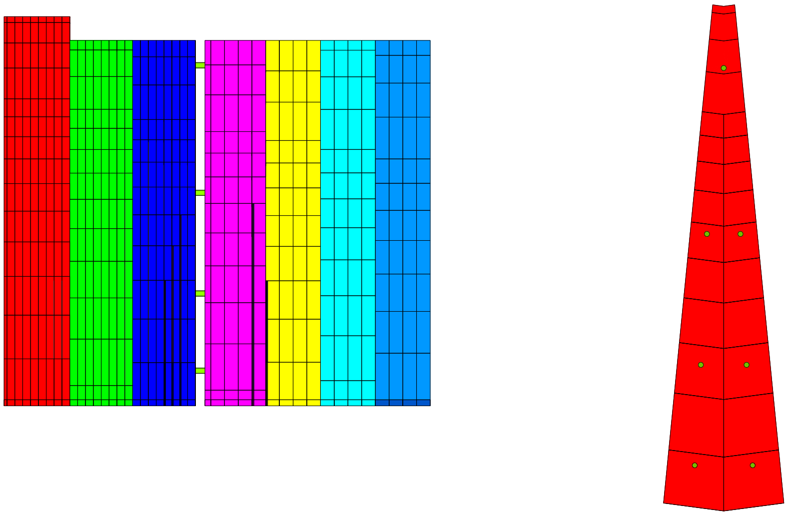
LArg Software/performance

HEC Simulation with Geant4

- Geometry
- G4/G3 Comparison
- Conclusion and outlook

HEC Geometry



- Parametrised volumes reflecting the Pads structure.
- Each volume has it's own ID ⟶ Hits collection straightforward.
- But!
  - Many small volumes: 1192 Cu, 1168 Pad Boards, 2363 EST boards (Front Module only!)
  - Memory Usage: 15-20MB.
  - Relatively slow tracking: 1s/GeV.

Use as few physical volumes as possible!

HEC Geometry

- Geometry close to the real HEC. Use more details only for the Readout.
- Use a Pad mapping to extract Hits during the tracking.
- About 7-10 MB of memory and 0.7s/GeV CPU time.