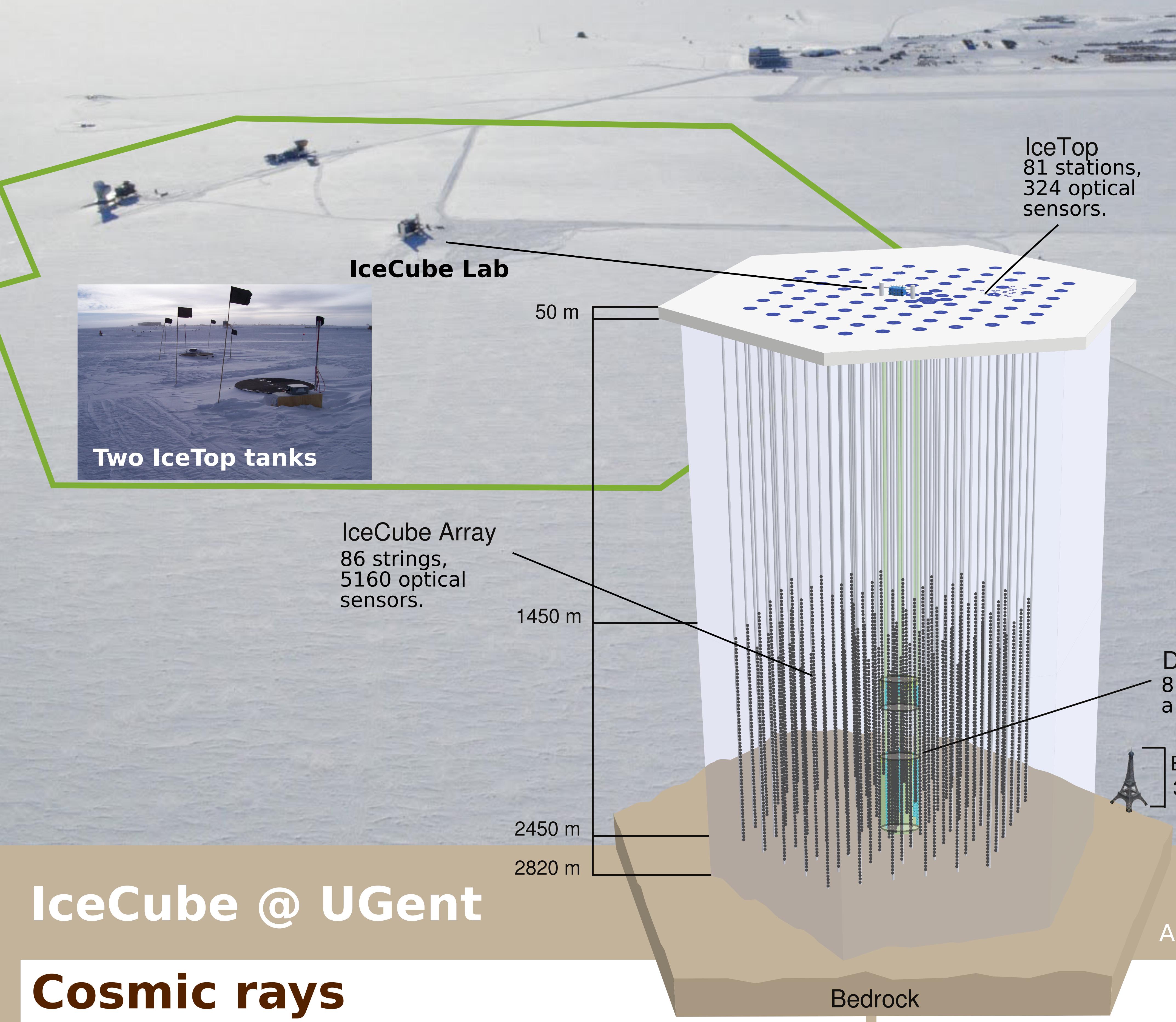


ICE CUBE



UNIVERSITEIT GENT



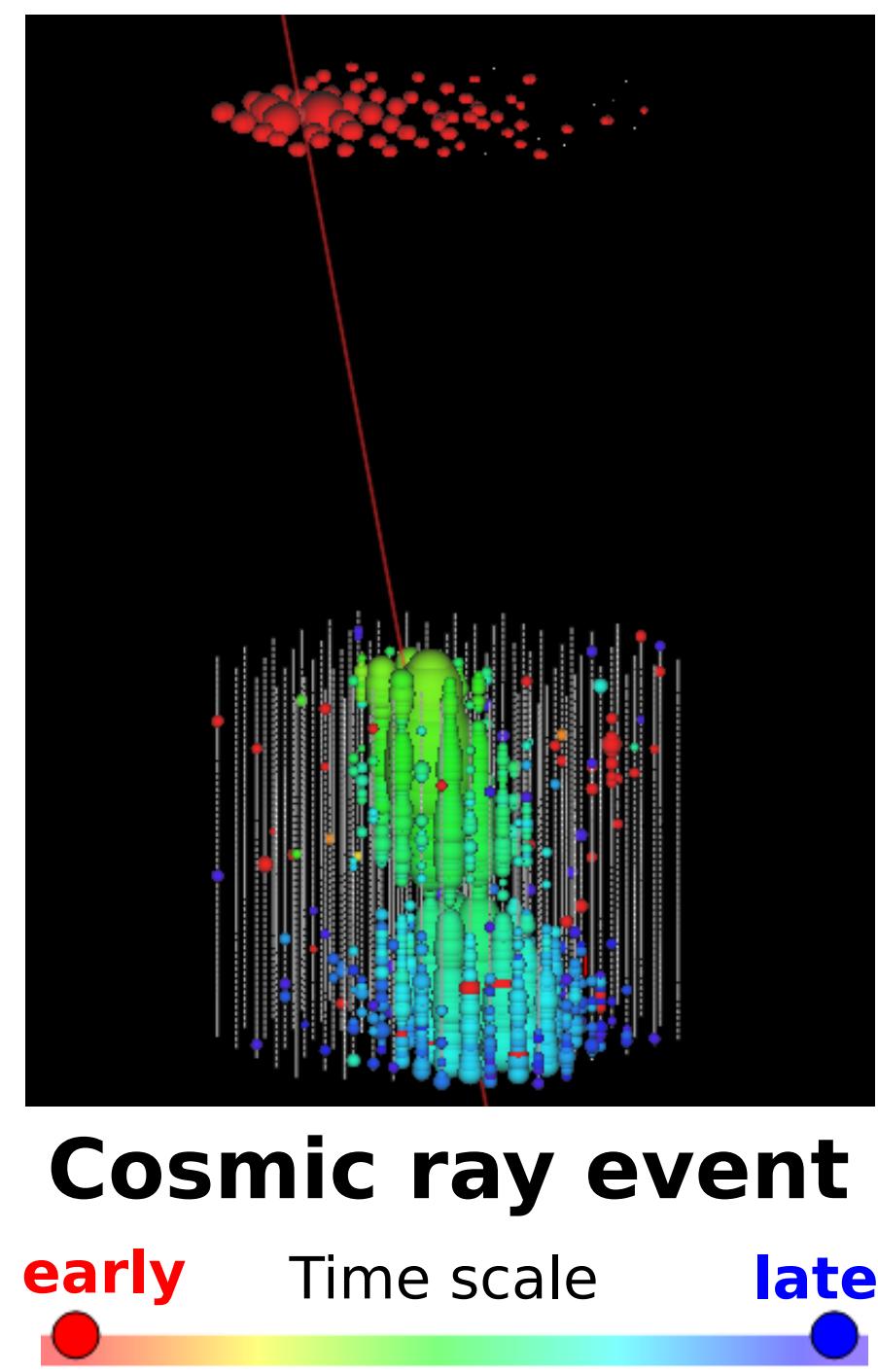
IceCube @ UGent

Cosmic rays

Cosmic ray air shower detection with energies from ~ 1 PeV to ~ 1 EeV

Hybrid detection technique:

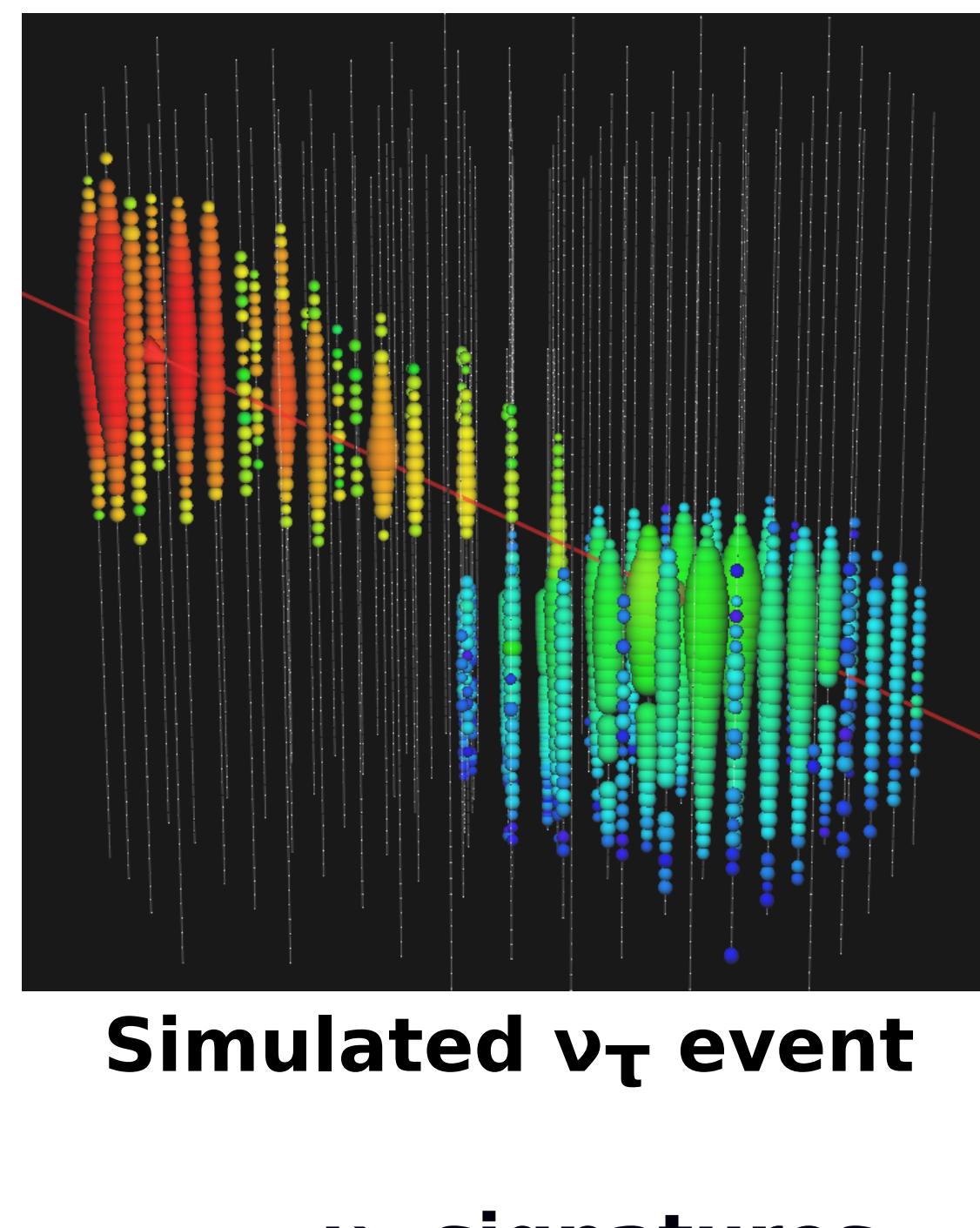
- Energy reconstruction using particle density distribution seen by IceTop
 - Mass sensitivity from high-energy muon bundle through IceCube



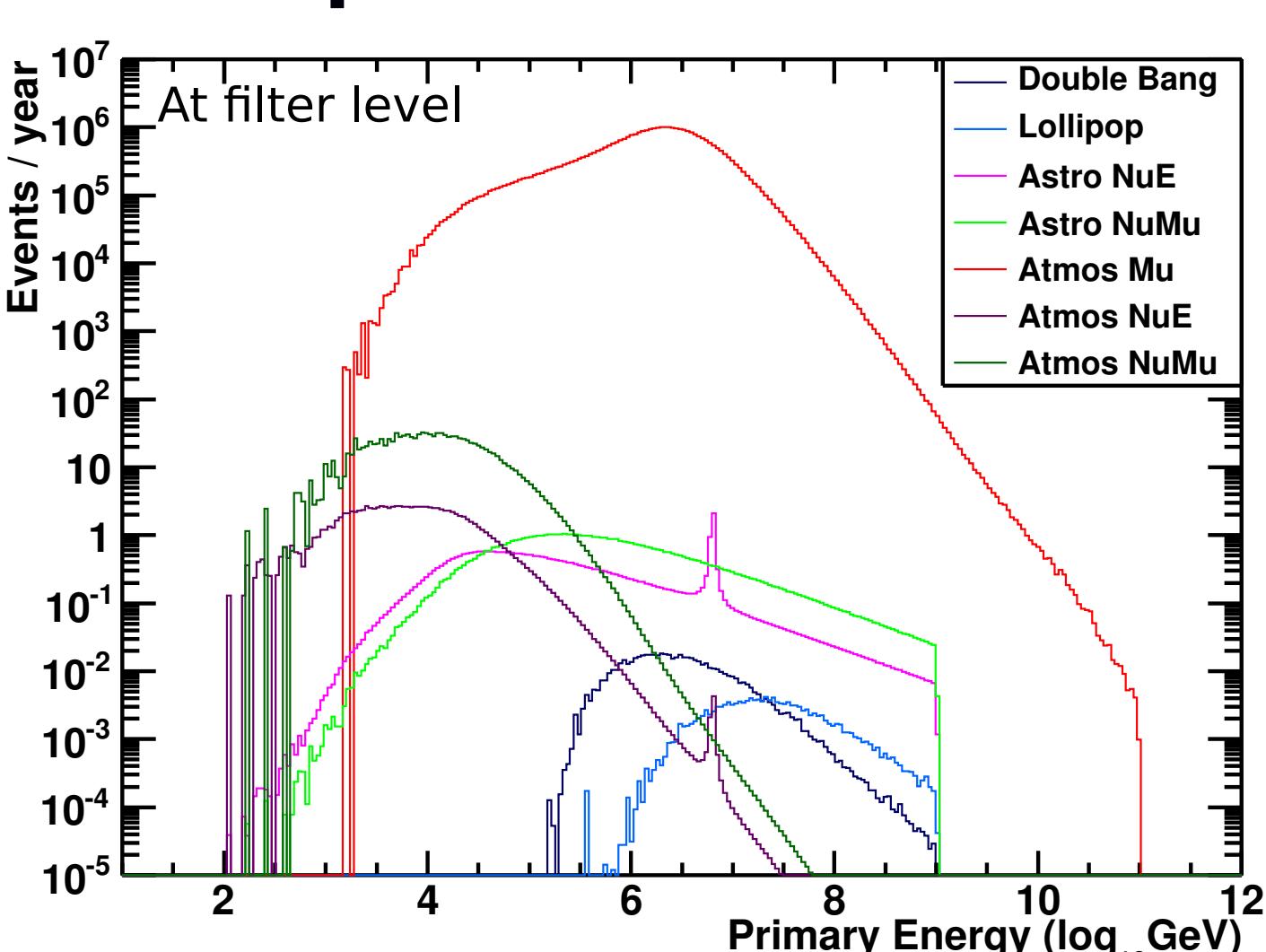
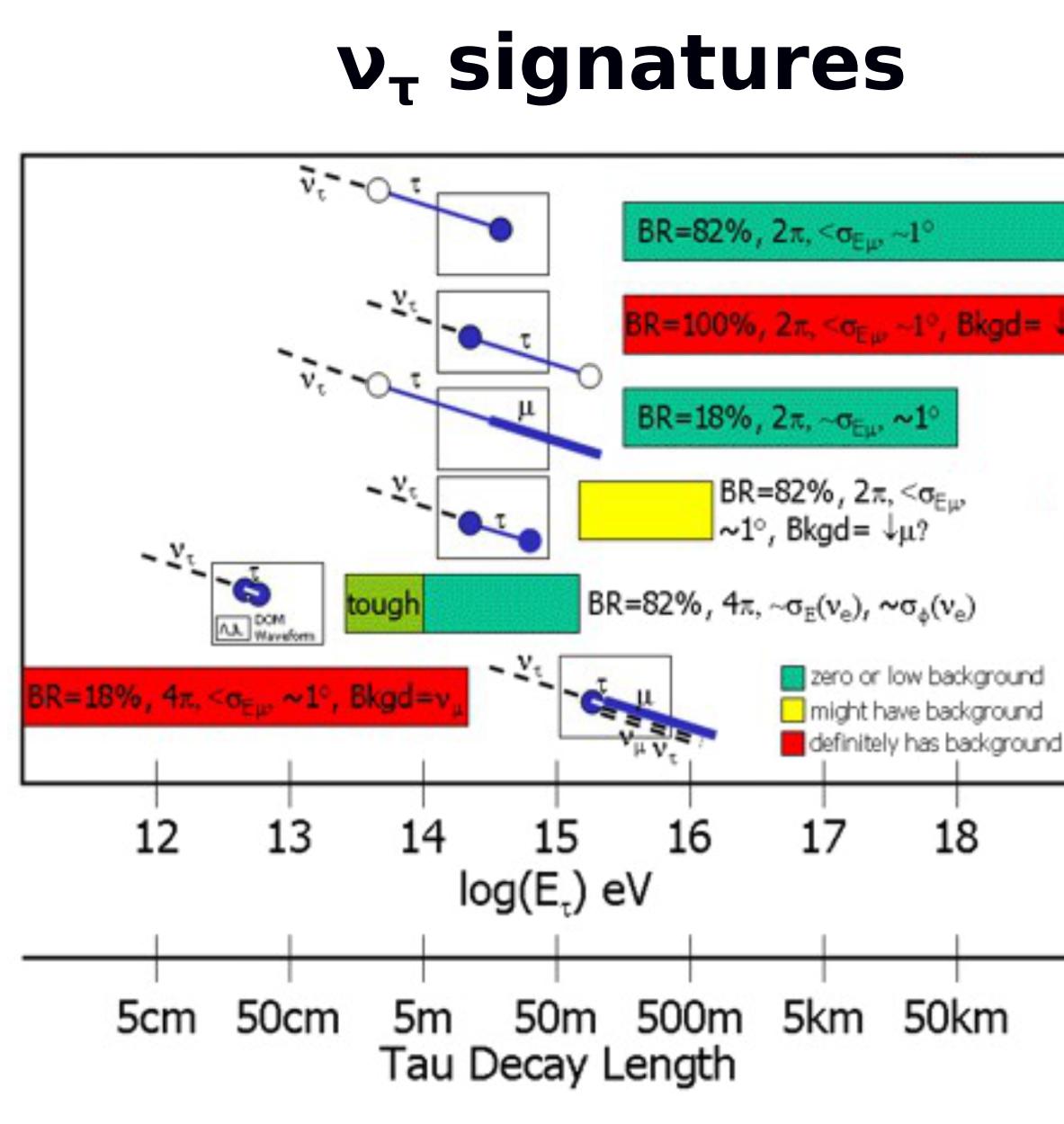
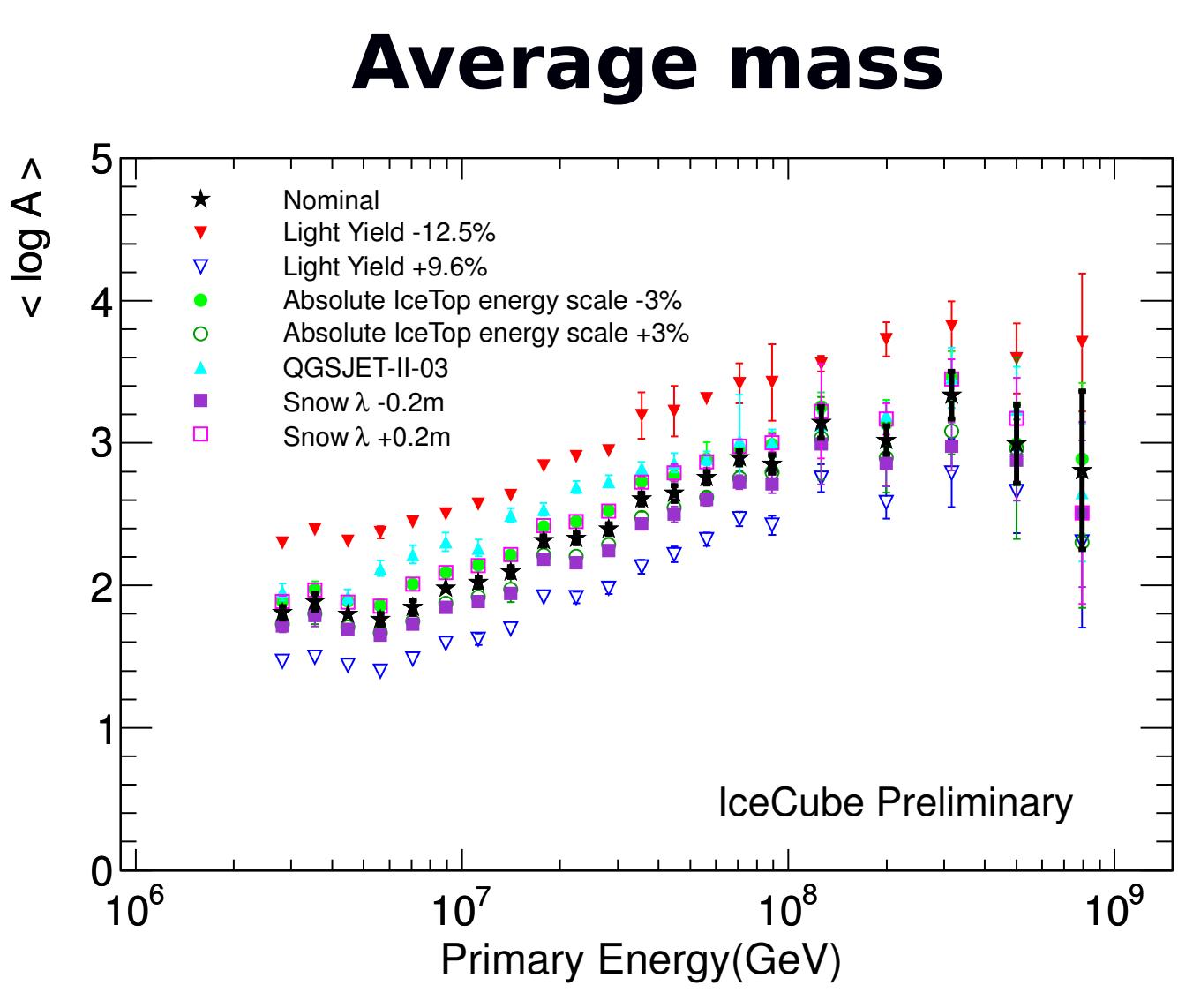
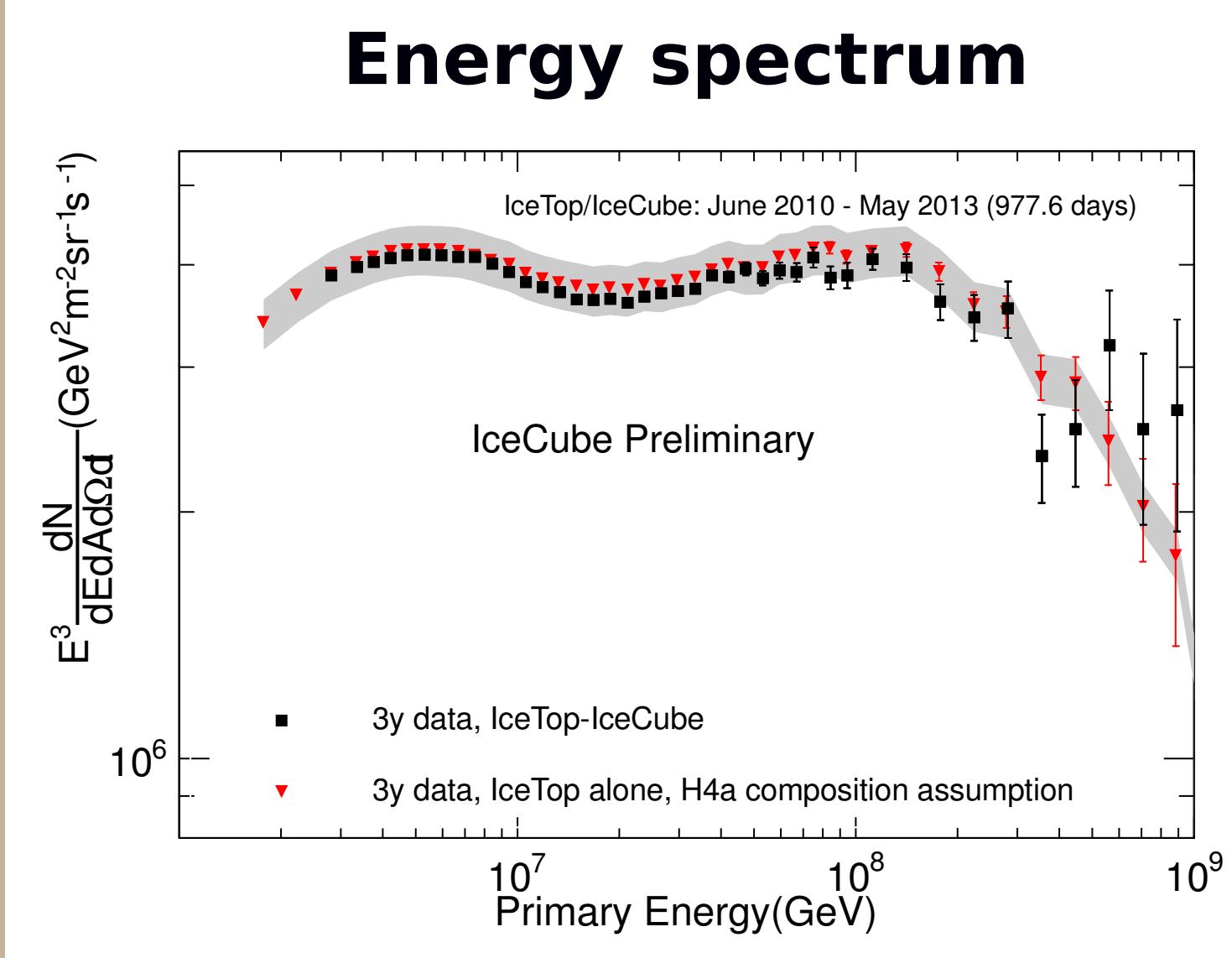
Cosmic ray event

early Time scale late

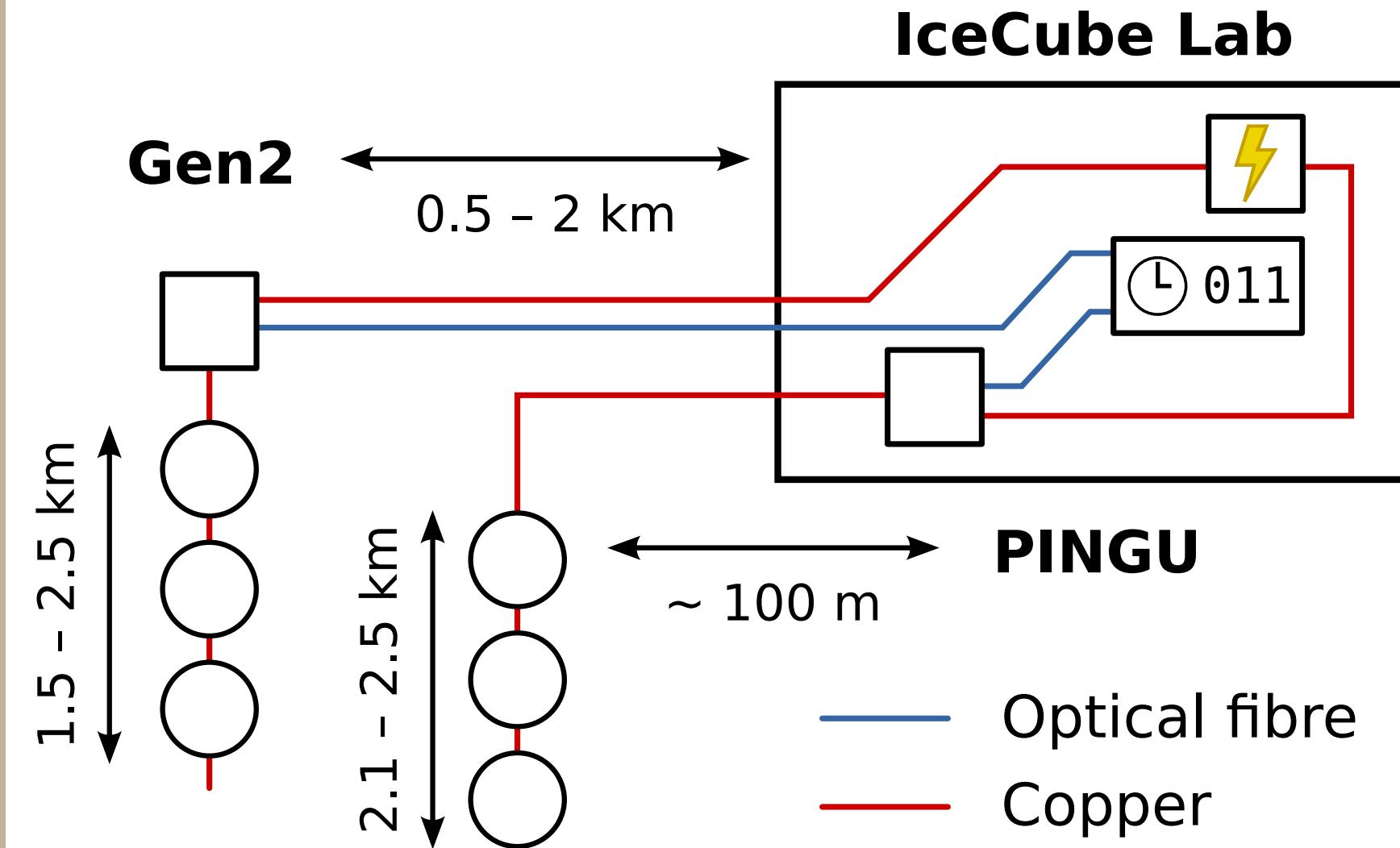




Simulated ν_T event



PINGU and Gen2 detector extension R&D: modem update



Total bandwidth requirements have increased

- Computing resources have improved:
No inter-DOM wiring for noise suppression needed
 - Further reduce cost and complexity of cabling:
Double number of DOMs per wire pair
 - ▶ Frequency multiplexing instead of time multiplexing
 - ▶ Integrate time synchronisation with data transmission

