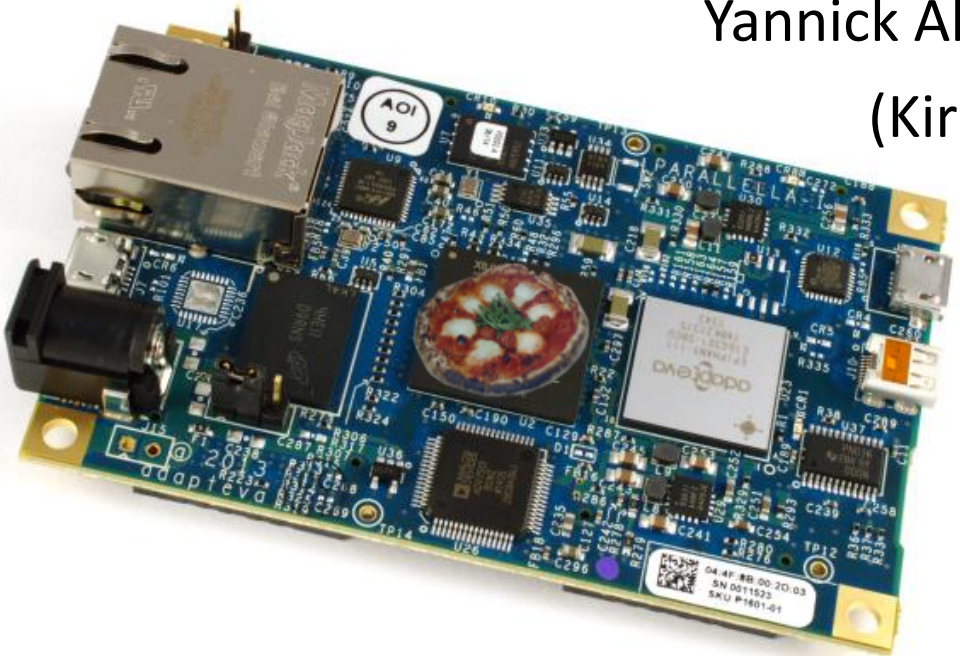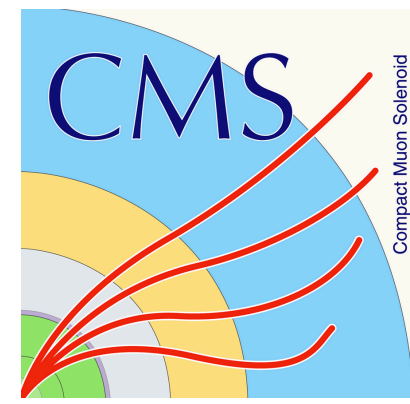# Trackella status

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(Kirill Skovpen, Pascal Vanlaer)

5/25/18 12:00

Done…

- On HW side:
  - Reading and loading hits from .txt works!
    - Worked on doublet finding
      - Generating doublets for each layer1 hit with all the l2 hits in the corresponding φ bin ☺
      - PRELIM. TIMING: Generating 100 doublets takes 3,1 µs
        - ~3 cycles per pair
        - Generating 100 doublets from 10 hits per layer (R&W included): 17 µs
    - Size of design: 1432 LUTs, 1339 FFs, 10 BRAMs
- On CPU & epiphany side:
- Fixed bugs in the doublet finder on the Epiphany:
  - Incorrect addresses
  - Race conditions
- Works!
  - Using one core only (have 16)
  - One order of magnitude slower than the CPU

To do…

- On HW side:
  - Finish implementing doublet finding (90% done)(☺☺)
    - Apply dϕ and dz cut

- On CPU & ephiphany side:
  - Understand what makes the Epiphany version so slow
  - Make timing plots vs nvtx, #hits and others (suggestions?)

Backup

10 hits in each layer, 100 doublets out

- 10* write time *2 + computing time *100 + reading time * 100 hits
- 280 cyles + 300 cylcles +1100 cycles = 1680 cycles (16 µs)