



富嶽三十六景 神奈川沖  
波裏

# Pixel Tracking on GPUs

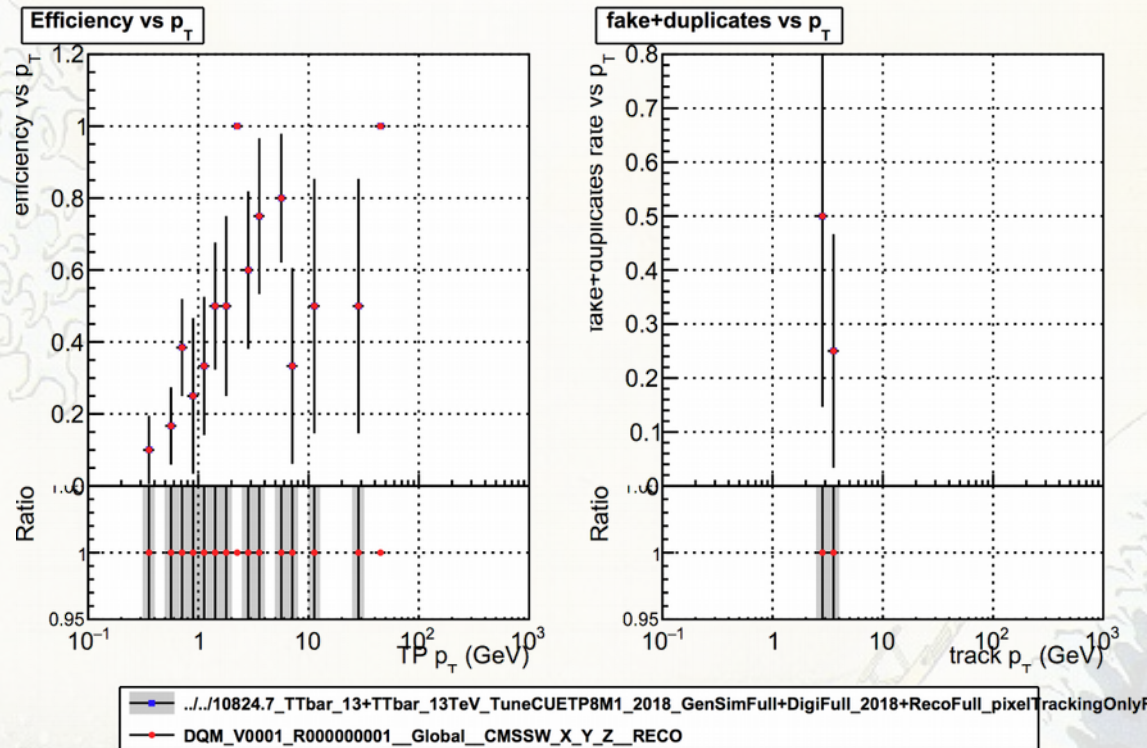
Andrea Bocci, Vincenzo Innocente, Matti Kortelainen  
Felice Pantaleo, Marco Rovere

3<sup>rd</sup> CMS Patatrack Hackathon, May 25<sup>nd</sup> morning scram

# Work done today

- Marco

- **done**: made Eigen more CUDA-friendly (again)
- **done**: porting the Riemann Fit to GPUs and CUDA
  - use one thread per fit / track
  - identical results on GPU vs CPU

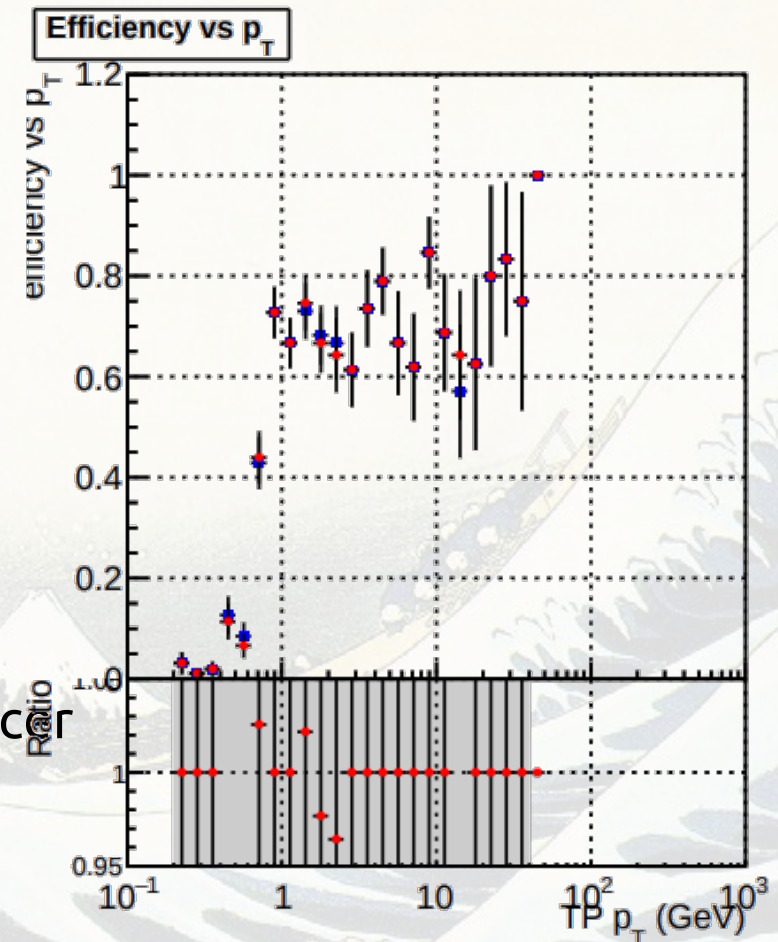


- Vincenzo

- **ongoing**: MC truth associator for the GPU products
  - **done**: CPU version of the algorithm

# Work done today

- Andrea
  - **ongoing**: teach CLANG to link CUDA device code
  - **ongoing**: help with Eigen
- Felice
  - **done**: porting the Cellular Automaton to a heterogeneous producer
    - slight change to the algorithms
    - similar results on the CPU and GPU
- Matti
  - **done**: heterogeneous “raw to cluster” producer
    - add clusterizer to the CPU implementation
    - produce a “heterogeneous product”



# For this afternoon ...

- Matti

- **to do** for the heterogeneous “raw to cluster”:
  - convert the heterogeneous output product to the standard CPU version
  - requires copy ctor / clone method in the edmNew::DetSetVector
- **next step**
  - make the following step in the chain consume the heterogeneous product

- Felice

- **to do**: make a pull request with the heterogeneous CA

- Marco

- **to do**: make a pull request with the Riemann Fit

- Andrea

- **to do**: integrate the changes to Eigen in the CMS distribution
- **to do**: test and integrate those PRs !