ATLAS Physics Analysis (Jobs and Data)

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Oct 25, 2017, CERN
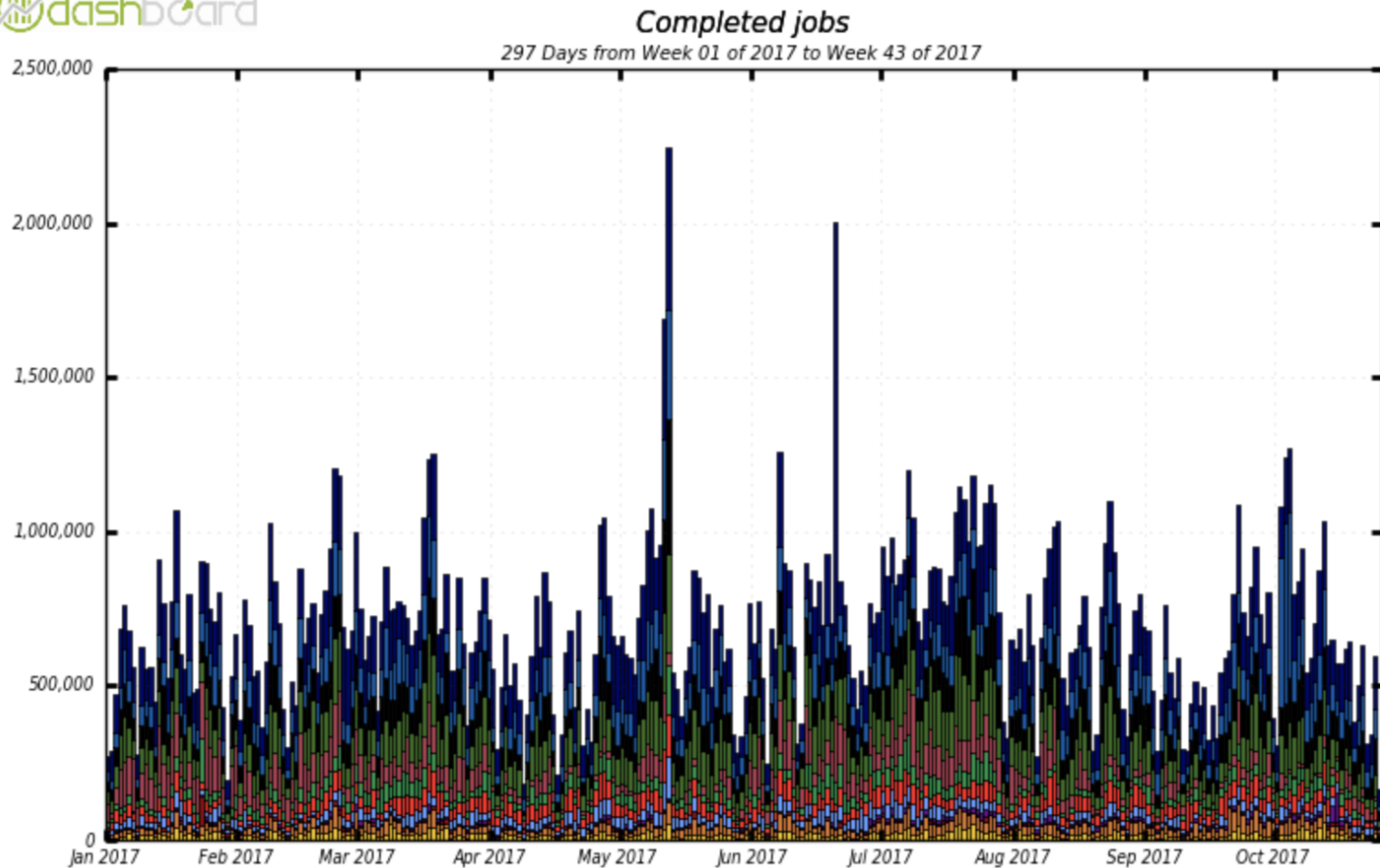
Thanks

- M.Lassnig and C.Serfon

Analysis Jobs Completed. Daily average
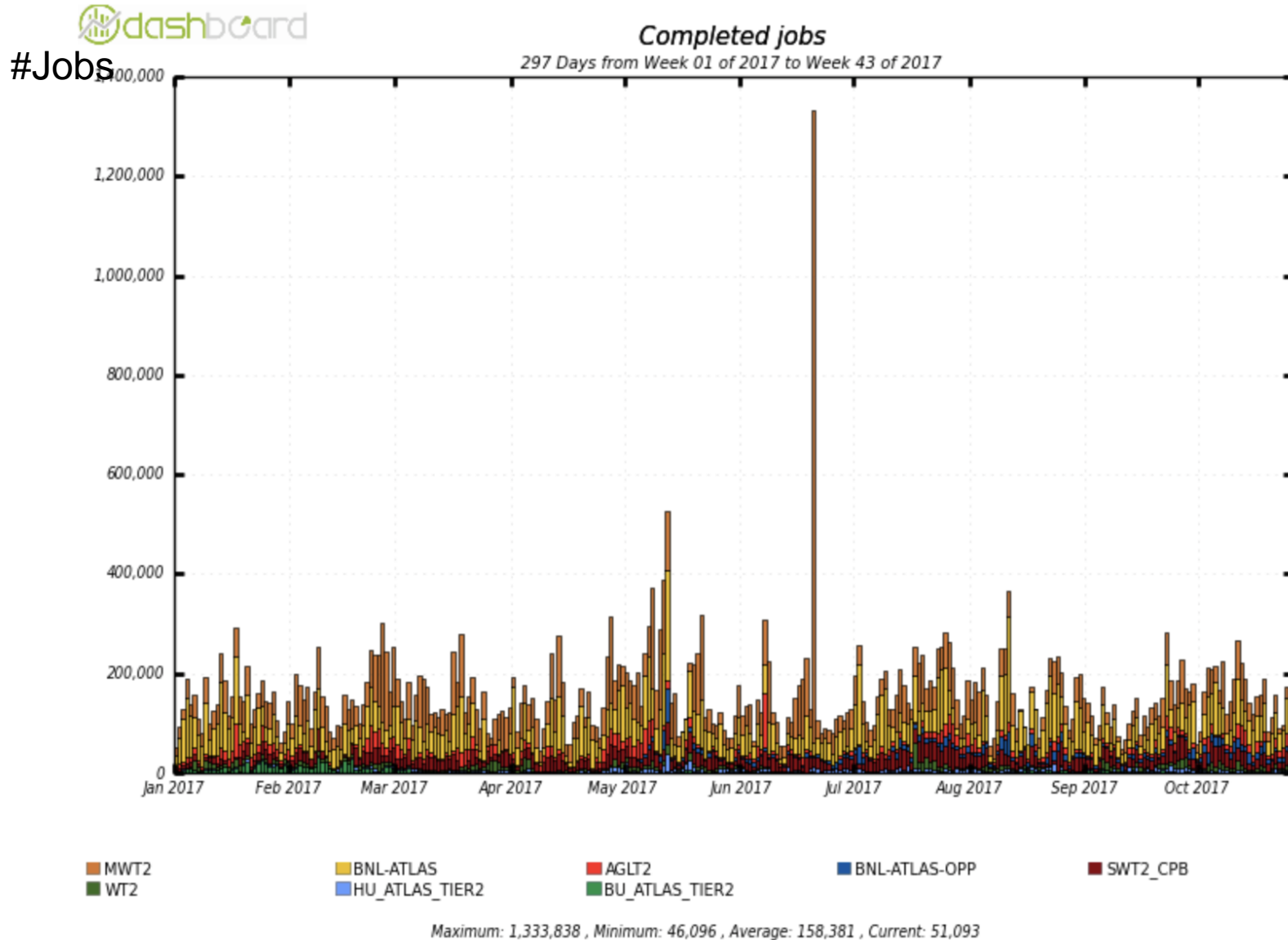

#Jobs

Completed jobs
297 Days from Week 01 of 2017 to Week 43 of 2017

Legend: US, FR, DE, UK, CERN, IT, CA, ND, RU, TW, NL, ES, other

Maximum: 2,248,007 , Minimum: 165,421 , Average: 692,444 , Current: 165,421

Analysis Jobs Completed. Daily average. US

Completed jobs
297 Days from Week 01 of 2017 to Week 43 of 2017

Maximum: 1,333,838 , Minimum: 46,096 , Average: 158,381 , Current: 51,093

Analysis Jobs Running. Daily average

Slots of Running Jobs
297 Days from Week 01 of 2017 to Week 43 of 2017
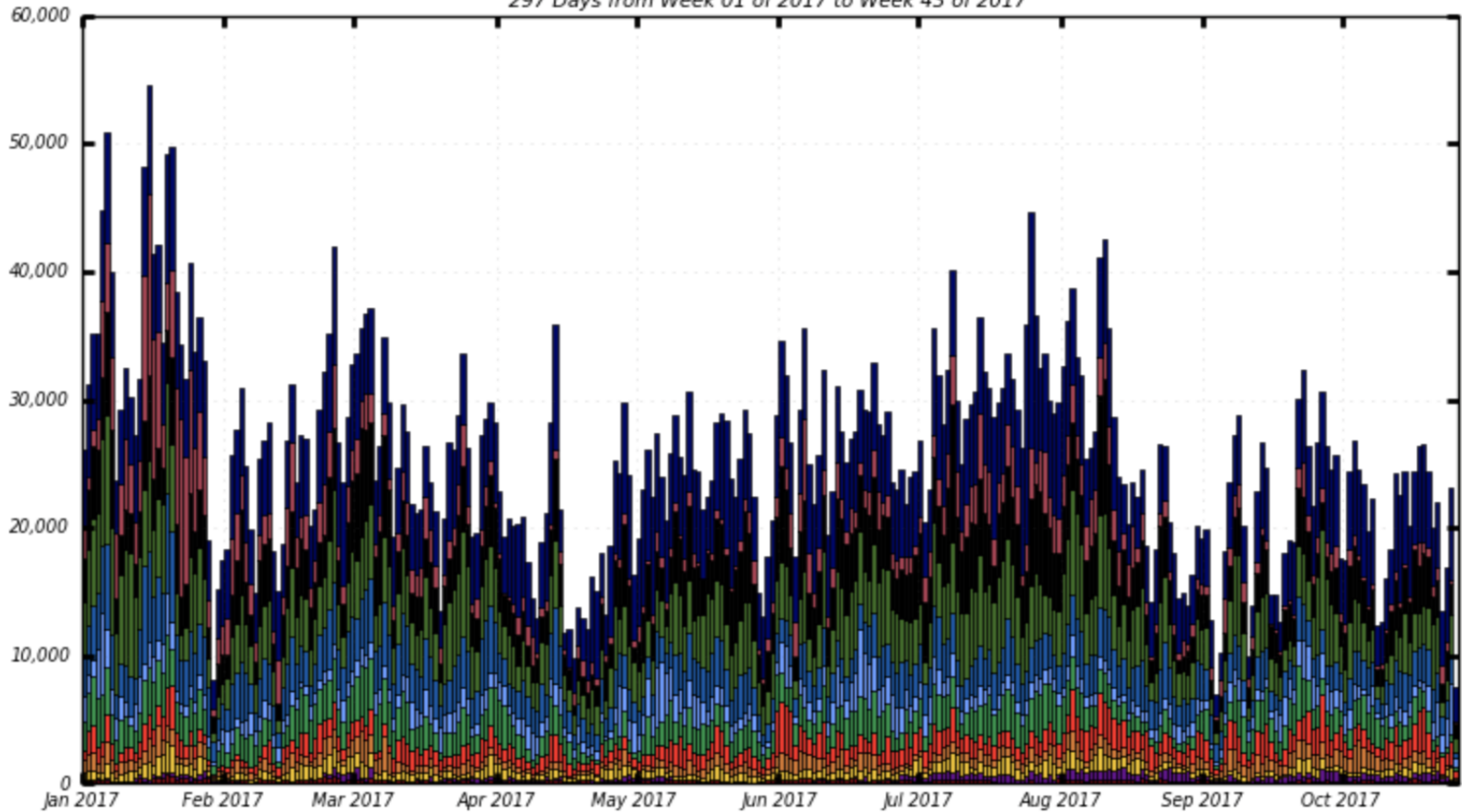
#Jobs

Legend: US, CERN, DE, UK, FR, ND, IT, CA, NL, ES, RU, TW, other

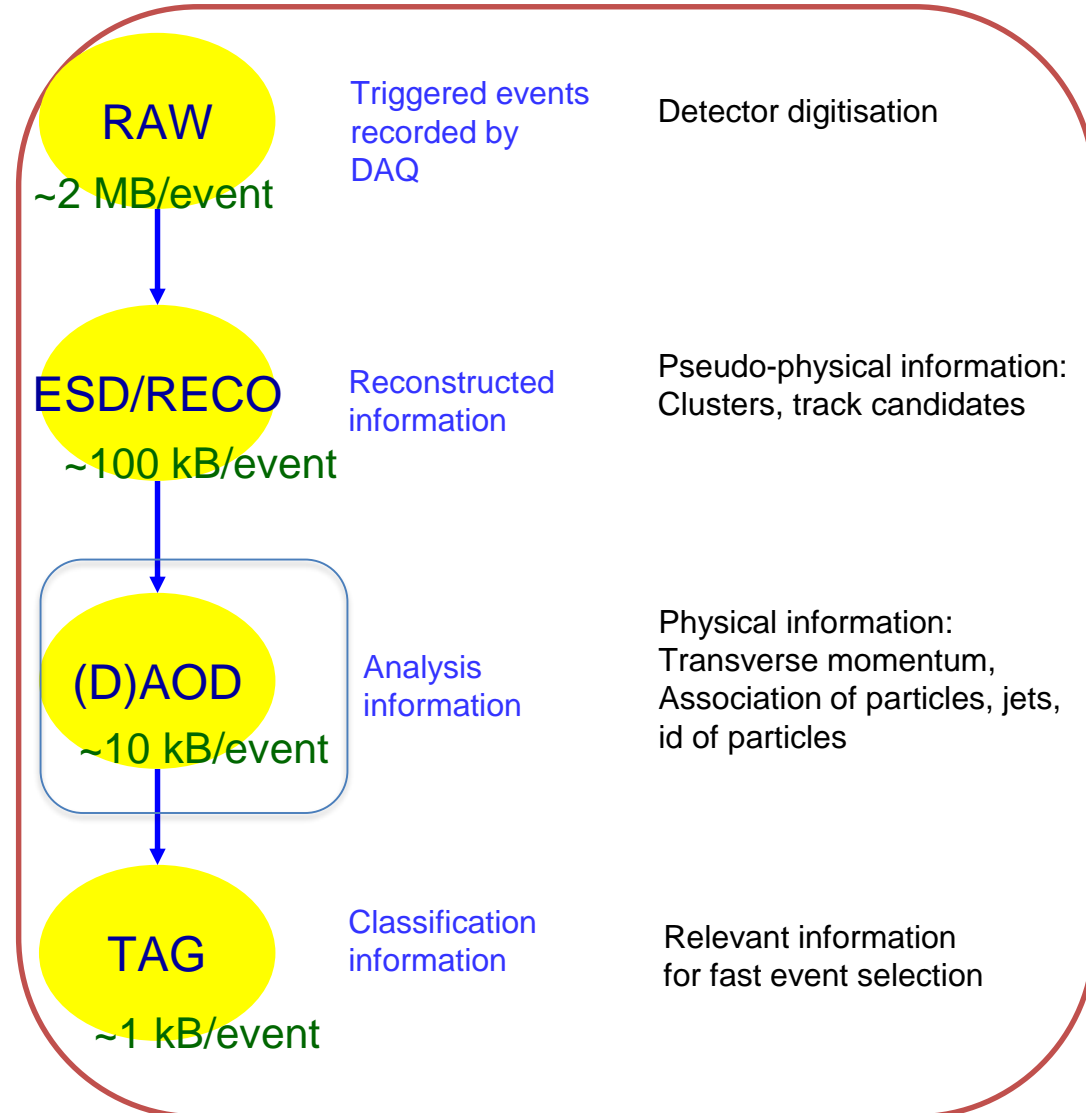Maximum: 54,606 , Minimum: 6,896 , Average: 25,551 , Current: 7,453

Analysis Jobs Running. Daily average. US
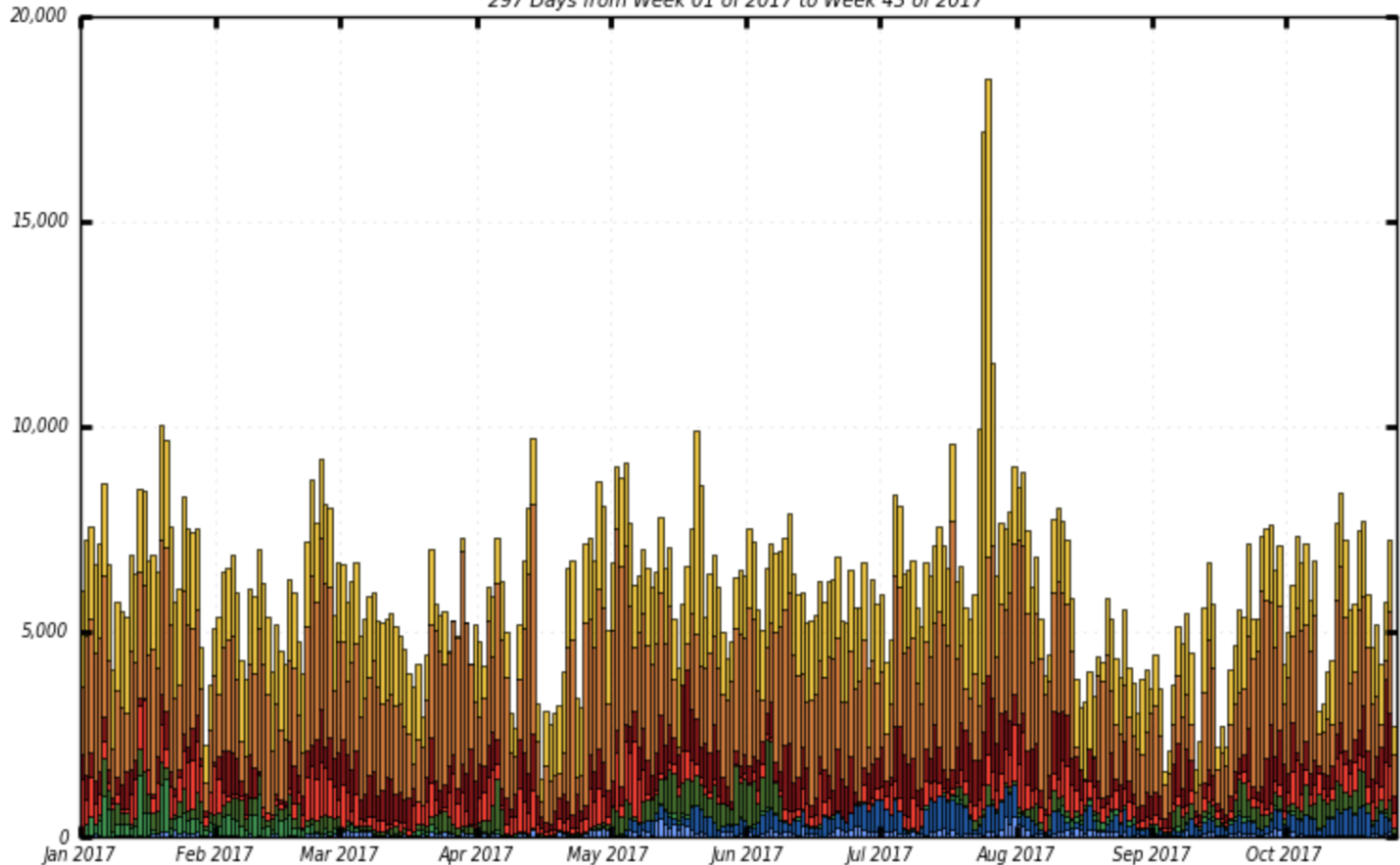
Data

Data and Algorithms

- HEP data are organized as *Events* (particle collisions)
- Simulation, Reconstruction and Analysis programs process "one event at a time"
  - Events are fairly independent → Trivial parallel processing
- Event processing programs are composed of a number of Algorithms selecting and transforming "raw" event data into "processed" (reconstructed) event data and statistics
- *ATLAS reconstruction and simulation code 4M LOC*
- *1000 software developers*

RAW
~2 MB/event
Triggered events recorded by DAQ
Detector digitisation

ESD/RECO
~100 kB/event
Reconstructed information
Pseudo-physical information: Clusters, track candidates

(D)AOD
~10 kB/event
Analysis information
Physical information: Transverse momentum, Association of particles, jets, id of particles

TAG
~1 kB/event
Classification information
Relevant information for fast event selection

Data Volume

- Dataset (group of files produced or processed under the same conditions. ~200-300 files per dataset)

project	#datasets	#files	TB	#"sites"
data16_13TeV	66.7K	2.23M	7695	218