

# Local Ecal/Hcal

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# Today

- Finished refactoring amplitude minimization to patatrack based release
  - Conditions per iov
  - Only event data transfers
  - So, now no cpu activity per event...
  - Finalize/push to patatarck once again...
- Will do a quick scan just to see the difference
  - On cmg-gpu1080 cpus, removing all cpu activity per event cuts time by 2x....

==31894== Profiling application: cmsRun /data/patatrack/vkhriste/cmssw\_configs/raw2digi\_ecalonly\_patatrack.py inputType=globalRun year=2017

==31894== Profiling result:

Type	Time(%)	Time	Calls	Avg	Min	Max	Name
GPU activities:	94.63%	279.94ms	100	2.7994ms	1.7353ms	4.0858ms	ecal::multifit::kernel_minimize(Eigen::Matrix<double, int=10, int=10, int=0, int=10, int=10> const *, Eigen::Matrix<double, int=19, int=19, int=0, int=19, int=19> const *, Eigen::Matrix<char, int=10, int=1, int=0, int=10, int=1>*, Eigen::Matrix<double, int=10, int=1, int=0, int=10, int=1> const *, Eigen::Matrix<double, int=10, int=1, int=0, int=10, int=1>*, float*, Eigen::Matrix<double, int=10, int=10, int=0, int=10, int=10>*, float*, char*, int, int)
	3.26%	9.6564ms	428	22.561us	928ns	6.5753ms	[CUDA memcpy HtoD]
	1.62%	4.7904ms	100	47.904us	12.865us	87.683us	ecal::multifit::kernel_prep_2d(EcalPulseCovariance const *, Eigen::Matrix<double, int=19, int=19, int=0, int=19, int=19>*, Eigen::Matrix<char, int=10, int=1, int=0, int=10, int=1> const *, unsigned int const *, float const *, float const *, float const *, float const *, float const *, double const *, double const *, double const *, double const *, double const *, Eigen::Matrix<double, int=10, int=10, int=0, int=10, int=10>*, Eigen::Matrix<double, int=10, int=10, int=0, int=10, int=10>*, Eigen::Matrix<double, int=19, int=1, int=0, int=19, int=1> const *, bool const *, bool const *, bool const *, unsigned int)
	0.30%	897.38us	100	8.9730us	7.8080us	11.489us	ecal::multifit::kernel_prep_1d_and_initialize(EcalPulseShape const *, Eigen::Matrix<double, int=19, int=1, int=0, int=19, int=1>*, unsigned short const *, unsigned int const *, Eigen::Matrix<double, int=10, int=1, int=0, int=10, int=1>*, Eigen::Matrix<double, int=10, int=1, int=0, int=10, int=1>*, Eigen::Matrix<char, int=10, int=1, int=0, int=10, int=1>*, float const *, float const *, float const *, float const *, float const *, float const *, float const *, bool*, bool*, bool*, float*, float*, float*, unsigned int*, char*, unsigned int, bool, bool, int)
	0.09%	277.25us	100	2.7720us	1.9840us	3.6160us	ecal::multifit::kernel_permute_results(Eigen::Matrix<double, int=10, int=1, int=0, int=10, int=1>*, Eigen::Matrix<char, int=10, int=1, int=0, int=10, int=1> const *, float*, char const *, int)
	0.00%	273.74us	200	1.3680us	1.0880us	2.5920us	[CUDA memcpy DtoH]