

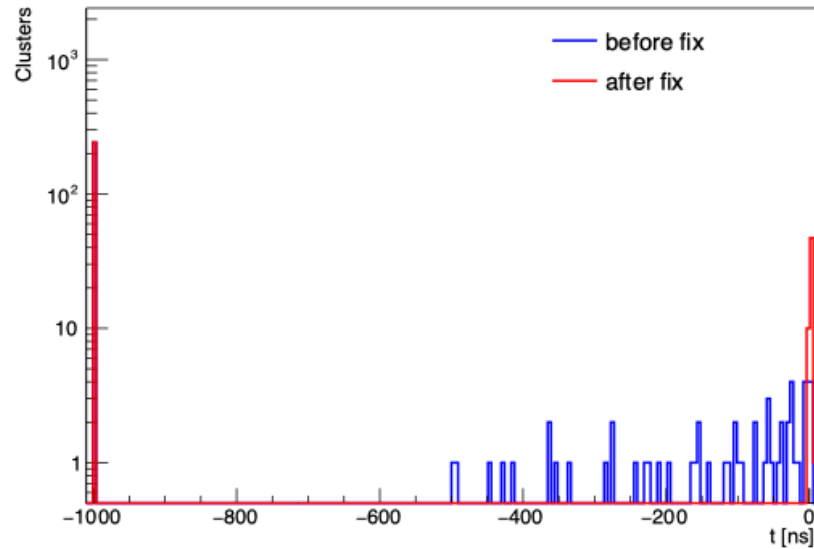
Particle Flow

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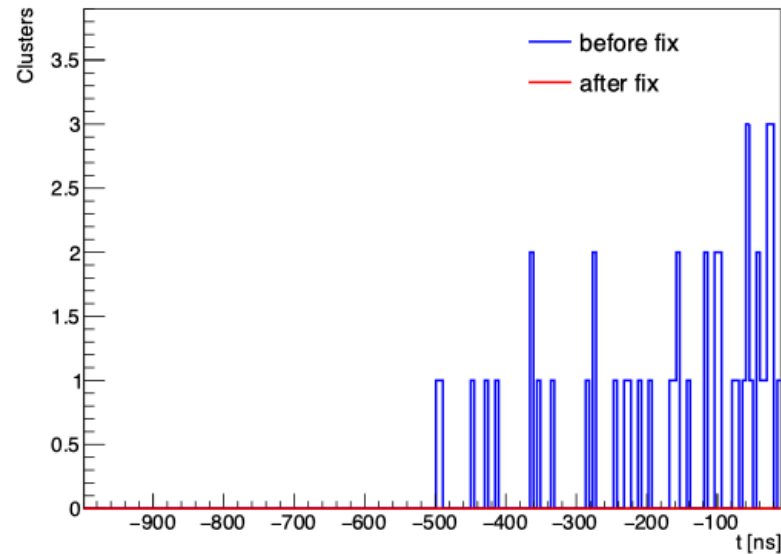
May 2026

HCAL Cluster time before and after fix

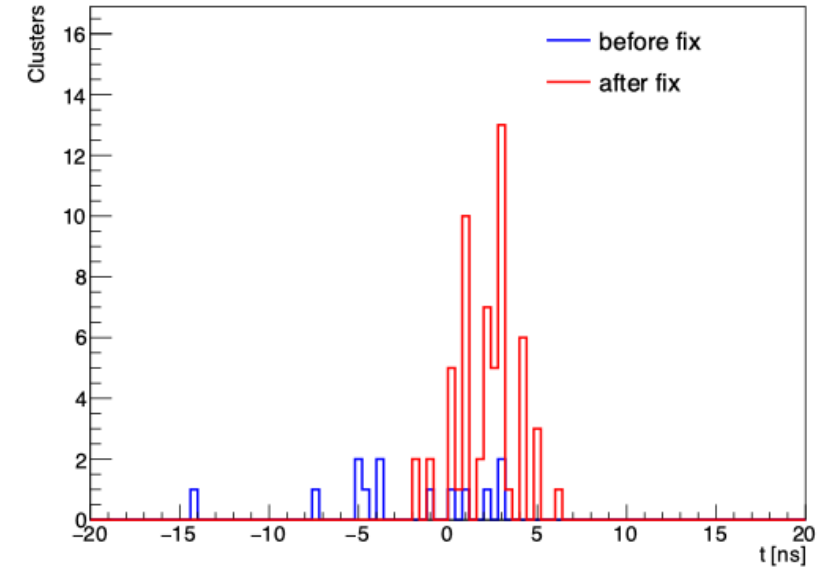
HCAL cluster time (all)



HCAL cluster time (contaminated range)



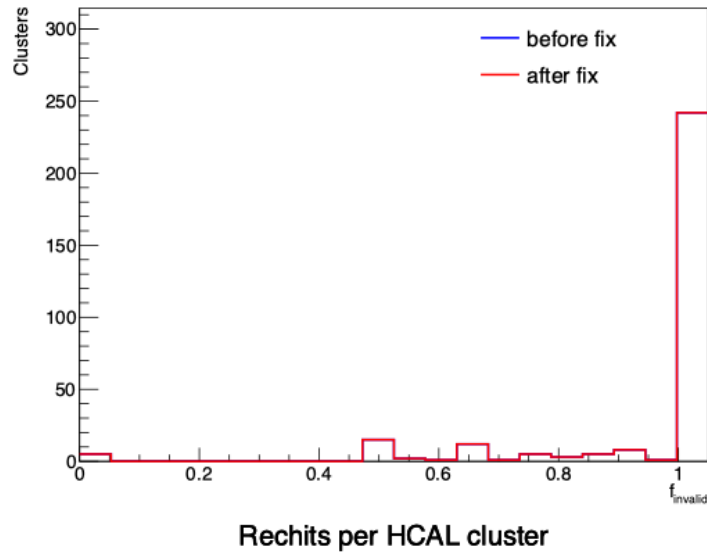
HCAL cluster time (valid only)



Before fix, there is a long tail of HCAL PF Cluster times between about -20ns and -999. After the fix, values are concentrated at -999 (no hits with valid time) and values close to 0ns (cluster has associated rechits with valid time).

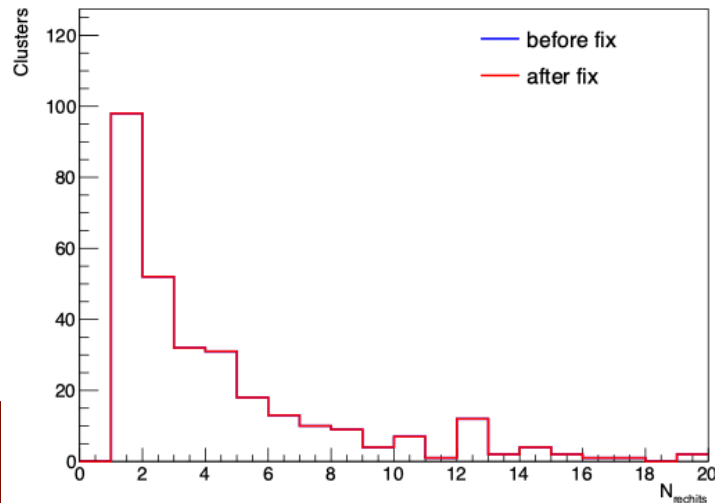
HCAL Cluster time before and after fix

Fraction of rechits with time=-999 per cluster (rechit-level, same before/after)

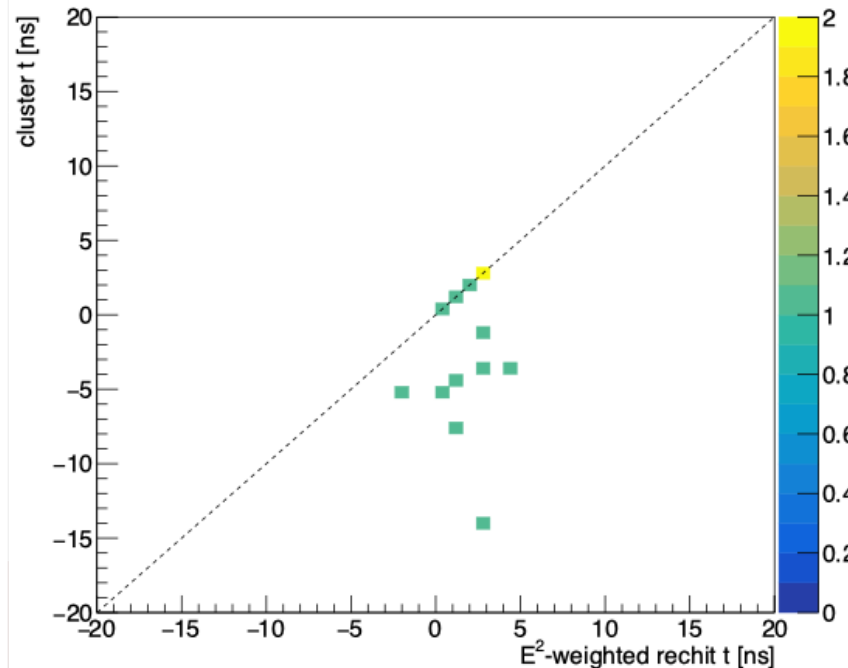


(Left) **PF algo not changed**: Number of rechits per cluster and fraction of rechits with $t = -999$ per cluster are the same before and after

(Below) **Cluster time is now consistent with computed rechit mean time**: expected!



(before) cluster time vs. E^2 -weighted mean rechit time



(after) cluster time vs. E^2 -weighted mean rechit time

