K40 (timing) calibration - activities report

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Activities

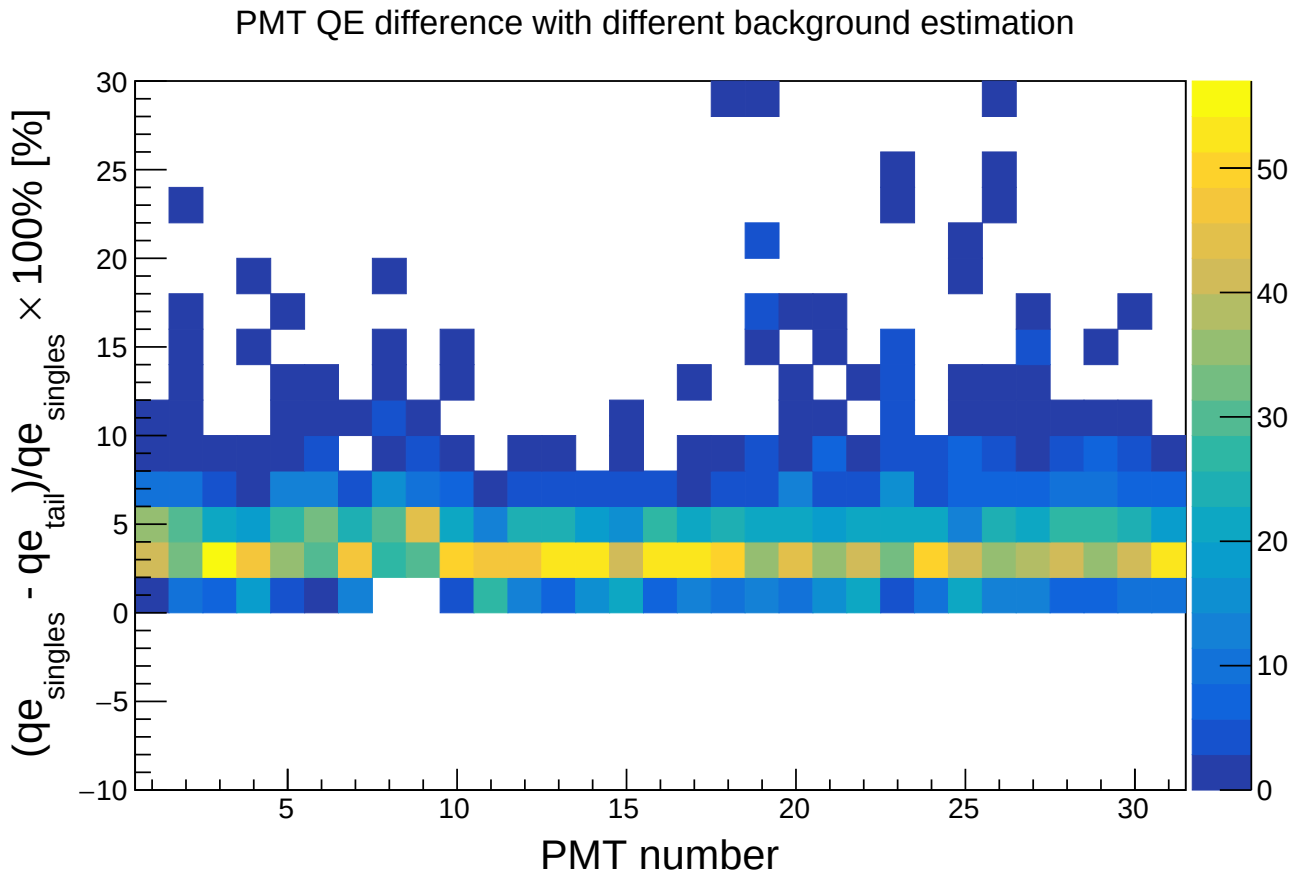
1. Possible depth dependence of quantum efficiencies in ORCA $\rightarrow$ summary by Jannik.
2. Comparison of JMonitor and Python K40 results (Jonas, Bruno) $\rightarrow$ under way.

Comparison of background estimations

- Analyzed with JMonitorK40/JFitK40, FIFO issue partially addressed (see Jannik's talk).
- ORCA runs 2976 – 2980.
- Input settings "-M 2+8 -T 10 -V 0+9900 -t 12+40 (-b -B 19+24)"

Comparison of background estimations

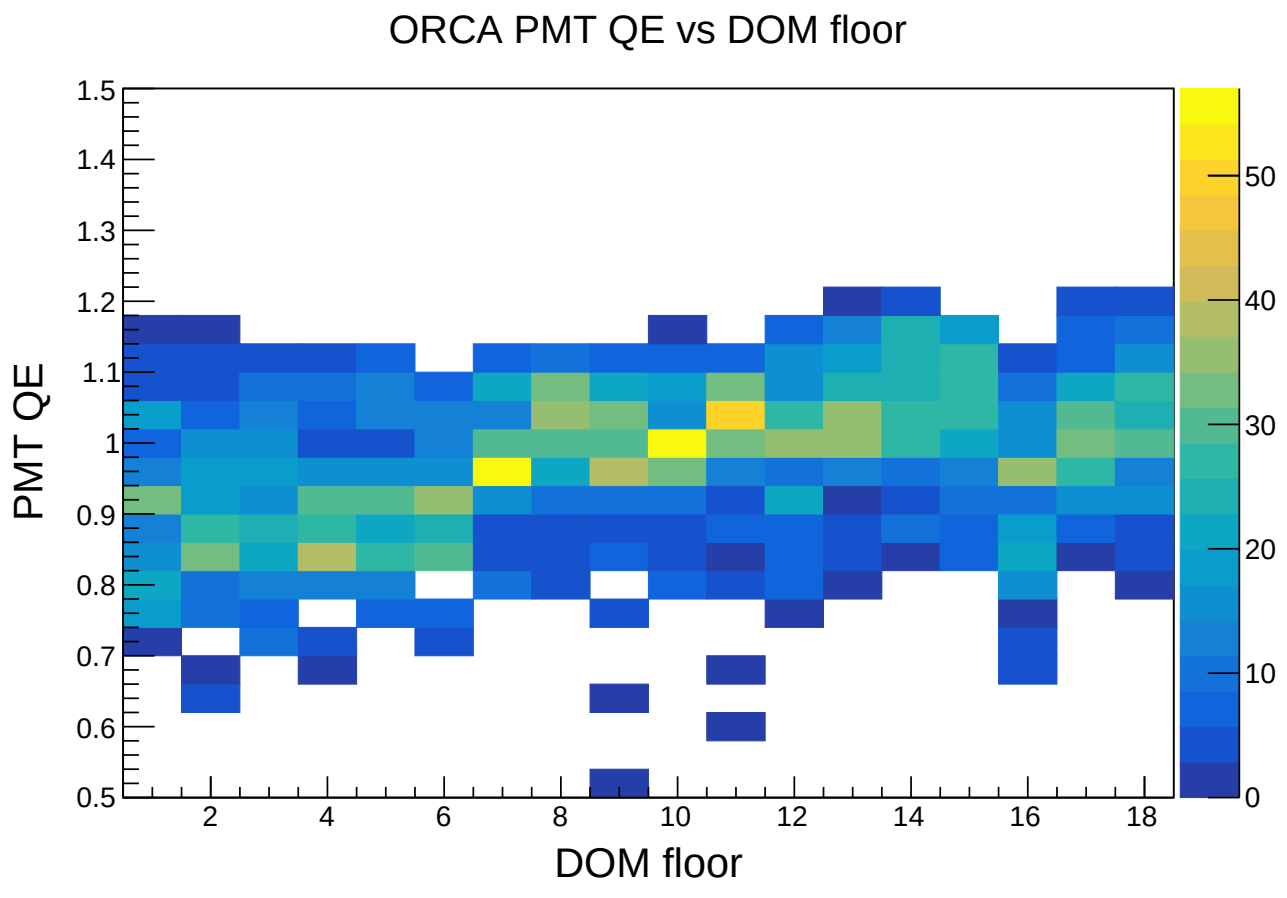
Comparison of PMT quantum efficiencies. Each projection along y-axis has $18\,\mathrm{DOMs} \times 5\,\mathrm{runs} = 90$ entries.



Systematic difference of $\sim$5%.

QE depth dependence - ORCA

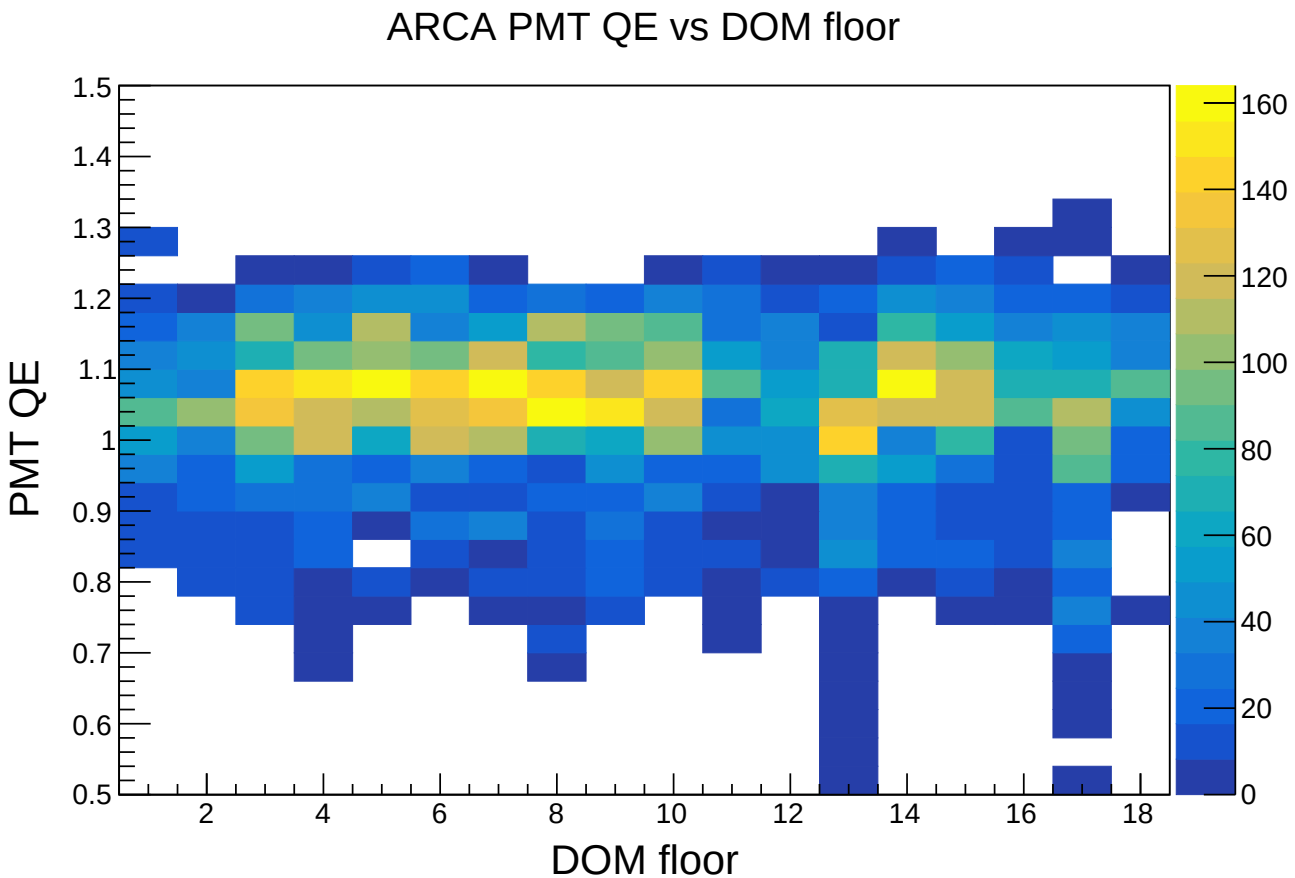
ORCA PMT QE vs DOM floor. Each projection along y-axis has $31\,\mathrm{PMTs} \times 5\,\mathrm{runs} = 155$ entries.



First six floors different?

QE depth dependence - ARCA

ARCA PMT QE vs DOM floor. Each projection along y-axis has $31\,\mathrm{PMTs} \times 11\,\mathrm{runs} \times 2\,\mathrm{DUs} = 682$ entries.



Outlook

1. Comparison between JMonitorK40/JFitK40 and Python K40.
2. Improvement to the FIFO correction in JMonitorK40/JFitK40.
3. ...