

## Summary of changes

Following the comments of the examiners and our discussion during the viva, I have implemented the following changes to my thesis:

- Fixed spelling and grammatical errors throughout.
- Rephrased and recontextualised some points for clarity and precision, according to examiners' suggestions.
- Added citations in Chapter 1 to support the description and discussion of the Standard Model which was previously unsupported.
- Added citations for figures in Chapter 1 that were previously not attributed.
- Added section in Chapter 2 on existing online monitoring and data quality monitoring solutions, justifying the motivation for DQM4hep in the context of existing tools.
- Added “heatmap” of detector in Chapter 4, showing the mean ADCs of the calibration runs, as a way of potentially identifying geometric patterns by eye. Also added text commenting that this is a good demonstration of easily creating ad hoc analysis plots using DQM4hep
- Added summary figure of raw ADCs for all channels of the detector in Chapter 4, demonstrating that the histograms are approximately Gaussian.
- Replaced Figure 5.9 with the correct plot and updated the caption appropriately.
- Fixed formatting errors and inconsistencies in the bibliography, especially ensuring that all authors are given in the format “F Surname”. Entries with a large number of authors are now credited either by their collaboration, or by the name of the first author *et al.*

If an exact account of all changes is required, the Github repository I used to backup and store my thesis provides a list of all differences between the version submitted for the viva, and the corrected version. This can be found [here](#).