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P2.057 Calibration and reconstruction of the Daya Bay antineutrino detector

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The Daya Bay Reactor Neutrino Experiment has produced the most precise measurements to date of the mixing angle θ_{13} and the mass-squared difference $|\Delta m^2_{ee}|$ in the electron antineutrino disappearance channel. In addition, the experiment has published a precision measurement of the reactor antineutrino flux and spectrum. Energy calibration and reconstruction are crucial to all of these measurements. Various approaches are used to understand the detector non-linearity, non-uniformity, energy scale and the related systematic uncertainties. The uncertainty of the detector uncorrelated energy scale and the absolute energy response are less than 0.2% and 1%, respectively. Nevertheless, these uncertainties are among the leading contributors to the overall systematic uncertainties and will continue to be studied. This poster presents the experiment's various calibration and reconstruction methods, as well as their performance.