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# Real-time calibrations for future detectors at FAIR

The real-time data processing of next-generation experiments at FAIR requires precise event topology reconstruction, which in turn depends on accurate in-situ calibration procedures. Machine learning techniques offer a promising approach to achieving fast and reliable calibrations using continuously available environmental data. In this study, we investigate a neural network-based method for calibrating the Drift Chambers of the HADES detector. By combining Long Short-Term Memory with graph convolutions, we achieve stable and accurate predictions, matching the quality of standard offline calibration across all drift chambers. Moreover, our approach significantly reduces the calibration time, making it well-suited for real-time applications within high-rate data acquisition environments.

## AI keywords

GConv-LSTM, regression, supervised/semi-supervised.

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