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Calibration of the CMS Preshower detector in Run1 and Run2

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The Preshower detector, part of the CMS Endcap Electromagnetic Calorimeter, is designed to have good spatial resolution to distinguish between different types of incoming particles. The Preshower is a sampling detector with two layers of lead absorber, each followed by 1.9mm pitch silicon strip sensors. Each of the 4288 DC-coupled sensors has an active area of $61 \times 61 \text{mm}^2$, making a total surface of around 16m^2 . The in-situ calibration is performed using isolated charged hadrons, which are close to minimum-ionizing. The precision required for the calibration of the Preshower is largely determined by the fraction of energy deposited in the Preshower with respect to that in the CMS endcap crystal calorimeter. The required channel-to-channel calibration precision is 5%. The achieved precision is better than 5%. In this poster, the calibration strategy and results with LHC Run1 and Run2 data will be described.

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