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Commissioning procedures and standard uncertainty of the benches for warm magnetic measurements of the LHC superconducting correctors in industry

The CERN-built warm industry benches for series testing of the module corrector magnets for the LHC, measure the field quality and the position and orientation of the magnetic field, relative to the mechanical construction. Both proprieties are required for an effective use of the magnets.

The field position relative to the mechanical reference frame is defined by 3 parameters: the two Cartesian co-ordinates of the magnetic centre and the field angle (dX, dY, and d θ).

Two kinds of benches are employed, positioning the magnets by means of grippers or by means of pins and holes.

The goal of this paper is to describe the calibration procedures, and assess the accuracy (standard uncertainty) provided by the benches.

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