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## Design of a Non-destructive Beam Position Monitor for Ultra-low Energy Antiproton Beams

The design of a non-destructive capacitive beam position monitor for low energy ion beams is described in this contribution with a particular focus on a future use with antiproton beams in the Ultra-low energy beam Storage Ring (USR), part of FAIR - the future "Facility for Anti-proton and Ion Research" (in Darmstadt, Germany).

There, antiproton particle beams will be decelerated to energies of only 20keV in a series of cooler synchrotrons and will then be provided for fundamental experiments in the USR or external traps.

The design of a capacitive BPM is described in this contribution together with a purpose-built test stand that was set up at the Cockcroft Institute, UK.

Results from measurements in the test stand are compared with simulation results with CST Studio and an overall design optimization is presented.

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