Beam stability at the MAX IV storage rings

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The MAX IV Laboratory, inaugurated in 2016, hosts a 3 GeV ring ultra-low emittance storage ring, a 1.5 GeV storage ring and a linear accelerator driven Short Pulse Facility.

A Stability Task Force has been assigned to ensure the delivery of stable beams to MAX IV users since early on in the design phase of the laboratory and is continuing its work in an ongoing and multi-disciplinary effort.

Measurements of the electron beam stability resulting from the passive stabilization approach taken for the two storage rings will be presented, as well as figures of beam stability with the Fast Orbit Feedback system in operation.

Each ID beamline in the 3 GeV storage ring is equipped with a pair photon beam position monitors that are currently used to complement the electron beam position monitors.

In the light of the city development around the MAX IV campus, maintaining the good mechanical stability of the laboratory has to be seen as an ongoing effort. A number of studies are being performed to identify possible risks and to decide where measures need to be taken.