Contribution ID: **263** Contribution code: **TUKB01** Type: **Invited Oral Presentation**

MAX 4U- Our vision for MAX IV

Tuesday 16 September 2025 10:20 (30 minutes)

In 2016, MAX IV inaugurated the first fourth-generation storage ring in the world. With unprecedented performance, this new accelerator paved the way for a new era of X-ray science. Currently, four more fourth-generation light sources are in operation, with many more to come online by 2040. Overall, the accelerator community is making considerable advancements in Multi-Bend Achromat (MBA)-type lattices. This is to such an extent that, whereas MAX IV paved the way for fourth-generation light sources, we will have difficulties competing with other synchrotrons in the future. With this in mind, we developed our vision for the laboratory to ensure the excellence, relevance, and leadership of Swedish academic and industrial research with X-rays for the next decades. This is called MAX 4U, and is our proposal to upgrade our 3GeV storage ring∗. MAX 4U will reduce the 3GeV ring horizontal emittance further from the current of 328pm×rad to better than 100pm×rad on the horizon of the early 2030s. Beyond an accelerator upgrade, MAX 4U provides opportunities for beamline performance improvements that will keep MAX IV a leading platform for accelerating science, discovery, and innovation.

Footnotes

∗ https://maxiv.lu.se/max4u

Funding Agency

MAX IV laboratory, the Swedish synchrotron lightsource, is funded principally by Vetenskapsrådet / Swedish Research Council.

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Session Classification: Keynote Session 2

Track Classification: NEW FACILITY DESIGN AND UPGRADE: Status