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## **Progress and challenges of the compact APPLE X undulator prototype at MAX IV**

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The potential future Soft X-ray (SXL) FEL beamline at the linear accelerator at MAX IV will require a series of undulators with distinct properties: It must be cost-effective and compact. Furthermore, it needs to have a small and round magnetic gap and provide elliptically polarized light under full polarization control. This undulator of a compact APPLE X type is currently being prototyped in the Insertion Device group at the MAX IV Laboratory. In this paper, we present the technical requirements of both, the mechanical and magnetic challenges that follow with the compactness and complexity of the device. Thereafter, we outline the assembly procedure of the undulator and present the methods we intend to use for magnetic measurements to evaluate the prototype's performance.

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### **Footnotes**

### **I have read and accept the Privacy Policy Statement**

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