



Contribution ID: 2332 Contribution code: MOPM069

Type: **Poster Presentation**

Commissioning of the ThomX Storage Ring

Monday, 8 May 2023 16:30 (2 hours)

We will report on the ongoing ThomX ring commissioning, its status, its main challenges, our results and our planning.

ThomX is a compact Compton-based X-ray source under commissioning at IJCLab in Orsay (France). This facility is composed of a 50-70 MeV linac, a transfer line and a storage ring whose closed orbit is 18 m long. Compton scattering between the 50 MeV electron bunch of 1 nC and the 30 mJ laser pulses stacked in a Fabry-Perot cavity results in the production of X-rays with energy ranging between 45 keV and 90 keV. We aim at a total flux of about 10^{13} X-rays per second.

The injector commissioning started in the spring of 2021. The ongoing storage ring commissioning faces many challenges due to the ring's low energy, its compactness, its non-linear beam dynamics, the time-limited beam storage and the need to achieve a very accurate and stable geometry of the collision region between the laser pulses and the electron bunch. The commissioning and operational experience is of great importance for the future Compton sources.

Funding Agency

The present work is financed by the French National Research Agency (ANR) under the Equipex program ANR-EQPX-51

Footnotes

I have read and accept the Privacy Policy Statement

Yes

Primary author: KUBYTSKYI, Viacheslav (Université Paris-Saclay, CNRS/IN2P3, IJCLab)

Co-authors: CHAIKOVSKA, Iryna (Université Paris-Saclay, CNRS/IN2P3, IJCLab); DELERUE, Nicolas (Université Paris-Saclay, CNRS/IN2P3, IJCLab); MYTROCHENKO, Viktor (National Science Centre); LOULERGUE, Alexandre (Synchrotron Soleil)

Presenters: KUBYTSKYI, Viacheslav (Université Paris-Saclay, CNRS/IN2P3, IJCLab); CHAIKOVSKA, Iryna (Université Paris-Saclay, CNRS/IN2P3, IJCLab); DELERUE, Nicolas (Université Paris-Saclay, CNRS/IN2P3, IJCLab); MYTROCHENKO, Viktor (National Science Centre)

Session Classification: Monday Poster Session

Track Classification: MC2: Photon Sources and Electron Accelerators: MC2.A24: Accelerators and Storage Rings, Other