



Contribution ID: 50 Contribution code: MOA01

Type: **Contributed Oral**

The Hard X-Ray Self-Seeding System at the European XFEL

Monday, 22 August 2022 09:30 (5 minutes)

This contribution describes, on behalf of the HXRSS team, design, installation, commissioning and operation of the Hard X-Ray Self-Seeding (HXRSS) system at the SASE2 FEL line of the European XFEL. We have reached up to mJ-level self-seeded pulses at 9-10 keV and the tested operational range is 6-13 keV. The setup can work in burst mode, that is following the bunch pattern of the European XFEL. The peculiarities of the European XFEL, that are high-repetition rate and long, tuneable undulators will be discussed, together with the impact of two-chicanes simultaneous seeding on the crystal heat loading. A discussion on possible future developments, including the production of self-seeded radiation at a harmonic of the fundamental, will complement the description of the current performance of the system.

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Yes

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