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LCLS-II Gas Based Intensity and Spectral Diagnostics for the Soft X-ray Range

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The LCLS-II superconducting accelerator has started operations after successful commissioning last August/September of 2024. Some of the initial performance parameters are photon energy range from 250 eV to 3.8 keV and a maximum repetition rate of 1 kHz. In the soft x-ray energy range (250-1000eV) we used a set of Gas-based Monitor Detectors (GMD) to measure first lasing photons and to transition to operations. Besides providing FEL intensity measurements we calibrated the photon energy and FEL bandwidth with a simple method by using a pair of GMDs while scanning the undulator gap. Results in the soft x-ray range are presented that complement the results in the hard x-ray range.

I plan to submit also conference proceedings

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