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Short Pulses and 2-Color Capabilities at the SASE3 FEL Line of the European XFEL

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European XFEL offers a unique combination of high electron energy and soft X-ray SASE3 undulator resonant to low photon energies with high K parameter. The long undulator allows us to employ split-undulator scheme to deliver pump-probe radiation to users. Pulse energies depend on photon energy and range from 100uJ at 2200eV to 900uJ at 600eV per pulse respectively. We plan to install optical delay line in the chicane to reliably scan through zero delay. Strongly compressed 16.5GeV electron beam combined with maximized orbit dispersion allowed us to generate 1keV- and 1mJ-order radiation with predominantly less than 2 spectral spikes. This operation mode was also employed to generate 100uJ-order pump-probe pulses.

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Yes

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