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The LBNL Femtosource 10 kHz Photoinjector*

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The LBNL Femtosource, a source of hard X-rays with a 60 fsec FWHM pulse length, will operate at a pulse rate of up to 10 kHz. The room-temperature 1.3 GHz photoinjector design updates include a modified re-entrant first-cell cavity which minimizes peak surface field, the addition of a third pi-mode acceleration cell, waveguide rf. feeds to each cell, and an active energy removal procedure which reduces the wall power density of all four cells. The plans for a scaled hardware test of the first cell at 850 MHz are under way.

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