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The SACLA C-band linac

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The Japanese XFEL (X-ray Free Electron Laser), SACLA adopts C-band normal conducting RF acceleration system as a main accelerator. The C-band system has constantly provided an acceleration gradient of about 40 MV/m since 2011 and it has accelerated electron beams up to 8.5 GeV at the maximum keeping sufficiently high stability of RF amplitude and phase required for high performance XFELs. Sixty-four accelerator units were in total installed, each of which consists of two 1.8 m-long accelerator structures, a cavity-type rf pulse compressor, a 50 MW pulsed klystron, a modulator and a PFN charger. This talk will be presenting the outline of our C-band acceleration system, achieved operational performance including fault statistics.

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