

Computer Controlled Bunch Charge Stabilization for the ELBE SRF Gun

Summary

The superconducting RF gun of the linear electron accelerator ELBE at Helmholtz-Center Dresden-Rossendorf is operated with a pulsed high power UV laser. The laser power directly determines the bunch charge. Due to technical reasons the laser is subjected to long term thermal drifts that directly translate into changes of bunch charge. In order to make the SRF gun available for user operation it is necessary to compensate these drifts. For this purpose a feedback loop was realized consisting of an adjustable laser attenuator, a beam current sensor and a real time controller. The poster shows the feedback setup and first experimental results.

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