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The progress report on Gun5.2 Operation

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A new generation of normal conducting L-Band RF guns (Gun5) is under development at the Photo Injector Test facility at DESY in Zeuthen (PITZ), with the goal to provide a high-quality electron source for superconducting linac driven free-electron lasers like FLASH and European XFEL. In addition to the improved cell geometry and cooling concept implemented in the new design, which allow for long RF pulse durations of up to 1 ms at a repetition rate of 10 Hz with gradients of up to 60 MV/m at the cathode, the new solenoid alignment system, the recently developed cathode contact spring, and new RF diagnostics possibilities aim to provide a higher-quality beam and improved gun operation performance. In this contribution we summarize the experience from the Gun5.2 commissioning and operation, and state the key improvements compared to previous guns.

Summary

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