

EMITTANCE MEASUREMENT WIZARD

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Abstract

The main objective of the Photo Injector Test facility at DESY in Zeuthen (PITZ) is the production of electron beams with minimum transverse emittance at 1 nC bunch charge. PITZ includes a photo cathode RF gun, solenoids for compensation of the space charge induced emittance growth and a booster cavity. In order to study the emittance evolution along the beam line, three Emittance Measurement Systems (EMSY's) were installed downstream of the booster cavity. The emittance is measured using the so called single slit scan technique. The Emittance Measurement Wizard (EMWiz) is a tightly integrated yet user-friendly software application in order to support, ease and speed-up the workflow necessary to obtain, in the long end, the calculated emittance. After user preparation, it provides automatic procedures to perform miscellaneous measurements in sequence in order to obtain intermediate as well as final results in a deterministic way. As a fundament to the application the TINE Video System at PITZ exemplary provides 2-dimensional beam spot image data and mechanisms to control live image acquisition.

**CONTRIBUTION NOT
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