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A Beam Profile Monitor Using Laser-Wire Systems

Laser-wire (LW) beam profile monitors will be very important beam diagnostic instruments for future very high energy/intensity particle accelerators to replace the use of traditional profiling techniques such as wire scanners or screens. LWs can be employed in synchrotron light sources, linear electron-positron colliders, and most recently H⁻ ion accelerators.

The PETRA-III LW, a Compton scattering beam size measurement system at DESY, uses an automated mirror to scan a Q-switched laser across the electron beam and is developed from the system previously operated at PETRA-II.

This talk will present a general overview of LW systems and also discuss the main challenges in setting-up and operating the PETRA-III LW.

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