

DIAGNOSTICS FOR FREE ELECTRON LASERS

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Abstract

Free Electron Lasers require a variety of beam diagnostics for tuning and feedback. This tutorial will cover radio frequency analog and digital signal processing as used in a variety of instrumentation including beam position, bunch length and arrival time monitors. It will also cover beam profile monitors including wire scanners, fluorescent screens, and optical transition radiation foils, including the issues with coherent emission from high brightness beams. In addition, it will discuss the unique requirements for X-ray instrumentation for existing and future XFELs.

**CONTRIBUTION NOT
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