Joint DESY and University of Hamburg Accelerator Physics Seminar

Tuesday, 02.04.2019

(16:00 in Room 459/30b)

Strategies and Simulations for the Early Commissioning of ALS–U and Other Fourth-Generation Light Sources

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Abstract

Diffraction–limited light sources generally employ high–gradient focussing elements to achieve the desired small beam emittances. The aggressive lattice design of these machines renders them much more sensitive to unavoidable magnet–alignment errors than existing third–generation light sources. It became questionable whether the procedures and strategies, successfully used in the commissioning of existing storage rings, would still perform well under these more difficult circumstances. To this end we are developing an `AT`–based toolkit which allows for realistic commissioning simulations of fourth–generation light sources by taking into account a multitude of error sources as well as diligently treating beam diagnostic limitations. This talk presents the toolkit, the automatic commissioning procedures implemented in it, and gives an overview of the ALS–U project at LBNL.

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