

GFA & SwissFEL Accelerator Seminar

Synchrotron Radiation Sources – Quo Vadis (@HZB)?

Monday, 13 July 2015, 16.00 h, WBGB/019

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Synchrotron radiation sources as multi-user large scale research facilities for applied and basic research have gained over the last decades a steadily growing user community. At the same time demands to these sources have increased continuously and the current 3rd generation storage ring light sources have adapted in a process of continuous development and up-grade to meet these requirements. With X-ray Free Electron Lasers (FEL) the photon parameter space was dramatically expanded and opened the way to entirely new experiments. Now we are facing the question of how future multi-user light sources will look like. Diffraction Limited Storage Rings (DLSR) promise to produce transversal coherent radiation only FEL were expected to reach. With the development of superconducting linear accelerator capable to operate continuously (CW), also for (Soft) X-ray FEL the possibility of true multi-user operation with highest usable average brilliance opens up. In general the question is how highest static and dynamic resolution can be provided at the same experiment. After a brief review of the history of synchrotron radiation sources, the current developments in this field will be presented and discussed. The example of the accelerator physics research at the Helmholtz-Zentrum Berlin with the projects bERLinPro (Berlin Energy Recovery Linac Project) and BESSY-VSR (Variable Pulse Length Storage Ring up-grade BESSY II) shows how these challenges are addressed.

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