PAUL SCHERRER INSTITUT

GFA Accelerator Seminar

Review of Injection Schemes for Electron Storage Rings and Synchrotrons

Monday, 23 April 2018, 16.00 h, WBGB/019

Dr. Masamitsu Aiba, PSI

Constant beam currents in light sources and lepton colliders maximise their production, namely photon beam flux and integrated luminosity. Nowadays, it is standard for storage/collider rings to incorporate top-up injection, which keeps the beam current essentially constant, while in the past these accelerators were operated with decaying beam current and interruptions to re-prepare the beams. However, it is required for achieving an ultra-low emittance in the next generation light source to employ a tight focusing lattice, and the dynamic aperture is then no longer adequate to employ the conventional injection scheme. In other words, the performance of the light source is limited by the beam injection. To overcome the limitation, several new injection schemes have been invented/developed within the light source community. Lepton colliders may benefit from these developments. A review of top-up injection schemes will be presented and discussed.

For more details contact Mike Seidel, Tel. 3378