

Channeling 2018



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The Hybrid Positron Source Using Channeling: a Promising Device for Future Colliders

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The important enhancement in photon generation due to channeling radiation in oriented crystals, with respect to ordinary bremsstrahlung, was observed experimentally at CERN and KEK. Positron sources using crystals have been extensively studied. Devices associating crystal-radiators and amorphous converters with a sweeping magnet between them, the so-called hybrid source, have been adopted by the CLIC linear collider as the baseline source and studied for ILC also. The interest of such sources is also evident for circular machines –colliders or storage rings- as illustrated by the studies on FCC-ee and SLEM (muon collider) which are presently under consideration. A large collaboration has been progressively built to develop such sources; it is associating French, Japanese, Russian and Italian laboratories as well as CERN. This presentation is showing the main features of this source as the state of the art and the R&D progresses for the different projects.

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