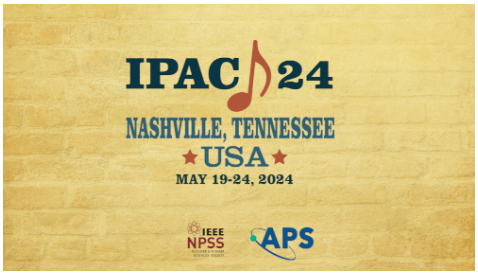

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Topologies for the kicker systems of the FCC-ee collider and injectors

Tuesday, 21 May 2024 16:00 (2 hours)

A central part of CERN's Future Circular collider study (FCC) is a ˜91 km circumference lepton collider and its injector complex. This contribution outlines the various kicker systems needed to transport the lepton beams from the electron source up to the collider dump system. The individual system requirements are presented, and the choice of design parameters and technology options for both, beamline elements and pulse generators are discussed. Potential challenges like the fast rise time of 50 ns for the damping ring kicker system working at 200 Hz repetition rate are highlighted, together with considerations on energy recovery. Ferrite loaded kicker magnet topologies are compared with system concepts employing strip lines. The paper concludes with a summary on the feasibility aspects and a recommendation for eventually needed prototype studies.

Footnotes

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Primary author: MARTINEK, Petr (European Organization for Nuclear Research)

Co-authors: FAVIA, Giorgia (European Organization for Nuclear Research); BARNES, Michael (European Organization for Nuclear Research); DIAZ ZUMEL, Miguel (European Organization for Nuclear Research); YUE, Sen (Institute of High Energy Physics); KRAMER, Thomas (European Organization for Nuclear Research); DUTHEIL, Yann (European Organization for Nuclear Research)

Presenter: DIAZ ZUMEL, Miguel (European Organization for Nuclear Research)

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