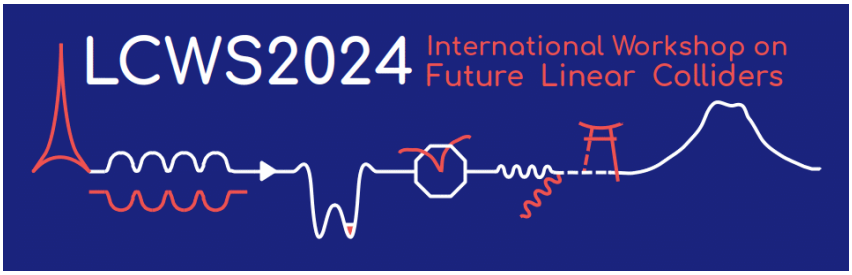

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Compact Traveling Wave X-band Linac with RF Power Flow Outside Accelerating Cavities

Wednesday 10 July 2024 15:00 (30 minutes)

During the development of the NLC/JLC normal conducting X-band linear colliders, it became clear that the RF power flow in traveling wave accelerating structures correlates more with the RF breakdown rate than with the peak electric fields. To mitigate the adverse effects of RF power flow, low group velocity and standing wave accelerating structures optimized for lower RF input power have been developed. As an alternative, to avoid RF power passing through the accelerating cavities, a new traveling wave structure was invented. Since this structure has higher efficiency than traditional axially coupled accelerator structures, it can be used in compact linear accelerators. In this report, we present a compact X-band linac that uses this new accelerating structure.

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