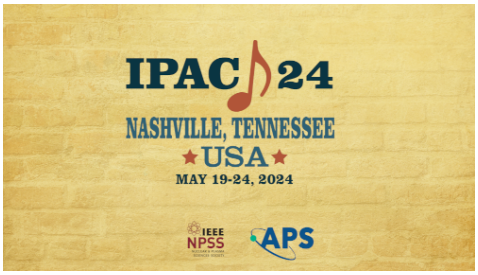

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Development of FFA RLA design concept

Monday, 20 May 2024 16:00 (2 hours)

A single wide-momentum-acceptance FFA beam line allows for recirculating a beam several times through a linac. Such a scheme provides an efficient path towards high-energy, high-power continuous beams. This paper describes the development of a conceptual design of an FFA RLA focusing on but not limited to a high-power hadron beam case. We present a complete optics design including arc, linac, and matching sections. The matching sections are implemented following the adiabatic approach whereby matching of all beam passes occurs simultaneously within a single beam line. Harmonic correction is applied for precise orbit and optics control of the individual passes. We discuss approaches to optimization of the linac timing and control of the longitudinal beam dynamics.

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