

Abstract Submitted  
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**Fringe Field Properties in Magnets with Multipole or Mid-plane Symmetry**<sup>1</sup> GEORGE BELL, DAN ABELL, Tech-X Corporation — The design of an accelerator with a large energy acceptance requires careful consideration of fringe-field effects. This applies particularly to the design of fixed-field alternating gradient (FFAG) accelerators. We consider magnets in straight and curved geometries, and with multipole or mid-plane symmetries. The longitudinal magnet profiles we consider include a simple hyperbolic tangent and a more realistic six-parameter Enge function. We show that when the fields are modeled using power series expansions in a transverse parameter, the domain of convergence is determined by the fringe-field decay length. We also demonstrate the use of these models in the tracking code PTC.

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