

Abstract Submitted
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Thermionic plasma injection for the Lockheed Martin T4 Compact Fusion Reactor experiment JONATHON HEINRICH, Lockheed Martin — Lockheed Martin's Compact Fusion Reactor (CFR) concept relies on diamagnetic confinement in a magnetically encapsulated linear ring cusp geometry. Plasma injection into cusp field configurations requires careful deliberation. Previous work has shown that axial injection via a plasma gun is capable of achieving high-beta conditions in cusp configurations [Park, J., et al., Phys. Rev. X 5, 021024 (2015)]. We present a pulsed, high power thermionic plasma source and the associated magnetic field topology for plasma injection into the caulked-cusp magnetic field. The resulting plasma fueling and cross-field diffusion is discussed. ©2015 Lockheed Martin Corporation. All Rights Reserved.

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