

Abstract Submitted
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Fluid dynamics and heat transfer in an accelerator-driven sub-critical fission core¹ AKHDIYOR SATTAROV, KARIE BADGLEY, THOMAS MANN, PETER MCINTYRE, GWYN ROSAIRE, Texas A&M University — Accelerator-driven subcritical fission in a molten salt core (ADSMS) is being developed as a technology for green nuclear power. ADSMS burns its fertile fuel to completion, it cannot melt down, and it destroys long-lived minor actinides. The ADSMS core consists of a vessel filled with a molten salt eutectic of UCl_3 and NaCl . Fission is driven by generating fast neutrons by spallation of energetic protons on spallation targets within the core. Fission heat is transferred from the molten salt to liquid Na in a primary heat exchanger located above the core. A conceptual design for the fluid dynamics and heat transfer in the core and in the heat exchanger will be presented.

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