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## Computational fluid dynamics design of a very high-power rotating positron target

*Sunday, 19 May 2024 16:00 (2 hours)*

Computational Fluid Dynamics (CFD) has been used to design a very high-power rotating tungsten target to produce a positron beam. The positrons will be produced by a primary 1 mA electron beam with energy 120 MeV impinging on a rotating tungsten wheel through bremsstrahlung. The W target will be instrumented with water cooling to remove the estimated 17 kW of heat deposited by the primary electron beam in it [1]. The target will be central to accomplishing a rich experimental program using a positron beam at Jefferson Lab. In this contribution, I will present the status of the CFD-driven design of the target and the path towards a production positron target.

### Footnotes

[1] J. Grames et al., "Positron beams at Ce+BAF", in Proc. IPAC'23, Venice, Italy, May 2023, pp. 896-899. doi:10.18429/JACoW-IPAC2023-MOPL152

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