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Rotating plasmas as mass filters for nuclear waste¹ ABRAHAM FETTERMAN, NATHANIEL FISCH, Princeton University — High-throughput mass filters can be a critical tool in the disposal of high level nuclear waste. The fission product is the most radioactive part of the nuclear waste and is responsible for most of the heat generation, although it is only a small fraction of the mass. Rotating plasmas can efficiently separate fission product from nuclear waste because every species in a particular mass group can be removed simultaneously. We compare quantitatively the performance of the plasma centrifuge, Ohkawa mass filter, and asymmetric centrifugal trap in separating fission product from nuclear waste.

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