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**Alpha Channeling in Centrifugal Mirror Machines** ABRAHAM FETTERMAN, NATHANIEL FISCH, Princeton University — The wave-particle alpha-channeling effect is generalized to include rotating plasma. Specifically, radio frequency waves can resonate with alpha particles in a mirror machine with ExB rotation to diffuse the alpha particles along constrained paths in phase space. Of major interest is that the alpha particle energy, in addition to amplifying the RF waves, can directly enhance the rotation energy which provides plasma confinement. This is an immediate and important technological use of this energy in that it reduces the dependency on electrodes contacting the plasma to provide the voltage profile. An ancillary benefit is the rapid removal of alpha particles, which increases the fusion reactivity.

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