Abstract Submitted
for the DPP11 Meeting of
The American Physical Society

Catalytic Alpha-Channeling of Wave Energy in Mirror Devices[1]
ANDREY ZHMOGINOV, NATHANIEL FISCH, Princeton University, Princeton, NJ 08544, USA — The possibilities for alpha-channeling in mirror reactors are significantly broadened if the alpha particle energy is channeled to minority ions rather than fuel ions. The minority ions then collide preferentially with the fuel ions, thereby completing the channeling of the alpha energy to the fuel ions. This technique, which relaxes the wave requirements since the wave need not now resonate both with the fuel ions and alpha particles, may be thought of as "catalytic alpha channeling." It may be particularly important in mirror fusion, as opposed to tokamak fusion, since the channeling effect in mirror machines exploits very different wave modes in very different ways.

[1]This work was supported by DOE Contracts No. DE-FG02-06ER54851 and DE-AC02-09CH11466.

Andrey Zhmoginov
Princeton University, Princeton, NJ 08544, USA

Date submitted: 26 Jul 2011 Electronic form version 1.4