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**Optimization Techniques for Alpha-Channeling in Mirror Machines** ANDREY ZHMOGINOV, Princeton University, NATHANIEL FISCH, PPPL — The alpha-channeling effect can be obtained by alpha particles resonant interaction with radiofrequency waves in mirror machines. The appropriate compositions of diffusion paths in the coupled velocity-configuration space are found and divided into topologically distinct categories. Based on this classification and further 'fine-tuning' of the best topologies, optimization techniques for alpha channeling are proposed. Computational models of different degrees of accuracy and complexity are used. In light of these computations, the feasibility of implementing this concept in practical systems is discussed.

Andrey Zhmoginov  
Princeton University

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