Contribution ID: **149** Type: **Poster**

Numerical simulation of particle dynamics in the magnetic mirror

Monday, 5 June 2017 13:40 (2 hours)

The motion of electron in the magnetic field from a pair of current-carrying circular coil was studied using the standard numerical method for solving the differential equations. The situations of two coils with the same and reverse directions current were studied respectively, and the results were compared.

In both of the two magnetic fields, the trajectory of an electron (or other charged particle) is sensitive to the initial state. Both types of magnetic mirrors are not capable of effective magnetic confinement for various initial states of electrons, even if confined at the beginning, but in subsequent movements, the electrons may escape at any time (when the time is long enough after).

【Key Words】magnetic mirror; MATLAB ; magnetic confinement

Eligible for student paper award?

Yes

Author: Mr WANG, Hui (Army Officer Academy)

Co-authors: Mr YANG, Jinhong (Institute of Applied Physics of AOA); Mr WANG, Weihua (Institute of Applied Physics of AOA); Mr ZHANG, Mengzi; SHI, Bo (Army Officer Academy)

Presenter: Mr WANG, Hui (Army Officer Academy)

Session Classification: M.POS: Poster Session M

Track Classification: Experimental devices