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MOTION OF CHARGED PARTICLES IN PERIODIC
MAGNETIC FIELDS

by

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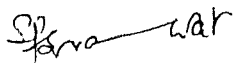


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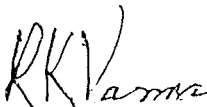
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CERTIFICATE

I hereby declare that the work presented in this thesis is original and has not formed the basis of the award of any degree or diploma by any University or Institution.


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STATEMENT

The primary aim of the work described in this thesis is to study the motion of charged particles in spatially periodic magnetic fields as that of a multimirror system and to look for effects predicted by Schroedinger-like equations for the non-adiabatic behaviour of an ensemble of charged particles in inhomogenous magnetic fields.

The theory, wherein the Schroedinger-like equations have been obtained, some important predictions arising out of it along with a survey of other theoretical, numerical and experimental investigations of the motion of charged particles in a spatially periodic magnetic field are discussed in Chapter I.

The experimental device, designed and set up for verifying the occurrence of Bragg-like reflections is described in Chapter II.

Details of the experiments carried out with the abovementioned objective in mind are discussed in Chapter III. Consequent observations and analysis are also presented therein.

A summary with conclusions and scope for future work is presented in Chapter IV.

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