International J. of Math. Sci. & Engg. Appls. (IJMSEA)
ISSN 0973-9424, Vol. 7 No. IV (July, 2013), pp. 1-9

ADIABATIC PROPAGATION OF SHOCK WAVES IN PRESENCE OF AXIAL MAGNETIC FIELD

R. P. YADAV[1], DARSHAN DEV[2], ETENDRA PAL SINGH[3], VINOD KUMAR[4] AND SUMAN LATA[5]

[1−5] Department of Physics, Govt. P.G. College,
Bisalpur (Pilibhit)-262201 (U.P.), India
E-mail: [1] rpyadav93pphysics@yahoo.co.in

Abstract

Energy hypothesis of Thomas is used to investigate the energy of the shock propagating adiabatically. The analytical expression for energy at shock front is obtained. The shock velocity and shock strength are calculated at different location of the shock front. Energy at these fronts are discussed with the help of tables and figures. The effect of magnetic field, which plays an important role in the propagation of shock waves is also investigated. Finally, analytical relations are obtained for all the flow variables. The computed variables are also discussed graphically.

Key Words : *Spherical shock waves, Adiabatic, Explosion, Energy consideration, Axial magnetic field.*