Chapter-I Introduction

- Fluid Dynamics
- Fundamental equations
- Equation of continuity
- Equation of state.
- Equation for the variation of the magnetic field.
- Equation of Energy
- Shock waves and their existence
- Jump conditions across a discontinuity.
- Jump condition in ordinary fluid.
- Jump condition in magnetogas dynamics.
- Radiation phenomenon
- Spherical and cylindrical shock waves
- Similarity principle and self similar gas motion
- Equation of motion and jump condition in magnetohydrodynamics
- MHD and the Sun.
- Characteristic method
- Witham’s rule
- References

Chapter-II Propagation of Exponential Magnetoradiative Shock Waves

- Introduction
- Equation of motion and boundary conditions
- Similarity solutions
Chapter-III Self Similar Power Driven Isothermal Flow Behind Cylindrical Shock in Monochromatic Radiation with Gravitational force

- Introduction
- Equation of motion and boundary conditions
- Similarity solution
- Solutions of equations of motion
- Result and discussions
- Figure
- References

Chapter-IV Propagation of plane shock wave in magnetogasdynamics

- Introduction
- Equation of motion for adiabatic flow
- Solution of the equation of motion
- Equation of motion for isothermal flow
- Result and Discussions
- Figure
- References

Chapter-V Self Similar Solution of Cylindrical Shock Wave in Magnetogasdynamics.

- Introduction
- Equation of the problem
- Solution of equation of motion
- Result and discussions
Chapter-VI Analytical solution of spherical shock wave in a rotating gas with axial component of magnetic field

- Introduction
- Basic equations
- Weak shock
- Strong shock
- Weak shock with weak magnetic field
- Weak shock with strong magnetic field
- Strong shock with weak magnetic field
- Strong shock with strong magnetic field
- References

Chapter-VII Self Similar Model of Radiative Shock Waves in Magnetohydrodynamics with Magnetic Effect

- Introduction
- Equation of motion
- Solution of equation of motion
- Result and discussions
- Tables
- Reference

Chapter-VIII Similarity Solution of Cylindrical shock wave with radiation energy and material pressure in Magnetohydrodynamics

- Introduction
- Self similar formulation
- Similarity solution
- Solution of equation of motion
- Result and discussions
- Tables
- References
- Publications