

Chapter9 - TOC

9 Electromagnetic Waves

- 9.1 Waves in One Dimension
 - 9.1.1 The Wave Equation
 - 9.1.2 Sinusoidal Waves
 - 9.1.3 Boundary Conditions: Reflection and Transmission
 - 9.1.4 Polarization
- 9.2 Electromagnetic Waves in Vacuum
 - 9.2.1 The Wave Equations for E and B
 - 9.2.2 Monochromatic Plane Waves
 - 9.2.3 Energy and Momentum in Electromagnetic Waves
- 9.3 Electromagnetic Waves in Matter
 - 9.3.1 Propagation in Linear Media
 - 9.3.2 Reflection and Transmission at Normal Incidence
 - 9.3.3 Reflection and Transmission at Oblique Incidence
- 9.4 Absorption and Dispersion
 - 9.4.1 Electromagnetic Waves in Conductors
 - 9.4.2 Reflection at a Conducting Surface
 - 9.4.3 The Frequency Dependence of Permittivity
- 9.5 Guided Waves
 - 9.5.1 Wave Guides
 - 9.5.2 TE Waves in a Rectangular Wave Guide
 - 9.5.3 The Coaxial Transmission Line