

School of Basic and Applied Sciences

Course Code : MSCP6001

Course Name: ELECTRODYNAMICS

Electrodynamics

Topic Covered

- The Need for Ether
- References

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Name of the Faculty: Dr. ASHUTOSH KUMAR

Program Name: M.Sc. Physics

The Need for Ether

- The wave nature of light suggested that there existed a propagation medium called the *luminiferous ether* or just **ether**.
 - Ether had to have such a low density that the planets could move through it without loss of energy
 - It also had to have an elasticity to support the high velocity of light waves

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Maxwell's Equations

- In Maxwell's theory the speed of light, in terms of the permeability and permittivity of free space, was given by
- Thus the velocity of light between moving systems must be a constant.

An Absolute Reference System

- Ether was proposed as an absolute reference system in which the speed of light was this constant and from which other measurements could be made.
- The Michelson-Morley experiment was an attempt to show the existence of ether.

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References

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