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Course :- Electrodynamics :- An introduction

AAL18ELO49

5th Sem, 'A' Sec

Github Rep :- Sindhu_Course.

- Introduction to diffrential calculus of vector fields.

→ Scalars, Vectors and the ∇ operator

- Scalars and Vectors

$A \cdot B = \text{Scalar} = A_x B_x + A_y B_y + A_z B_z$

$A \times B = \text{Vector}$

$(A \times B)_x = A_y B_z - A_z B_y$

$(A \times B)_y = A_z B_x - A_x B_z$

$(A \times B)_z = A_x B_y - A_y B_x$

$A \times A = 0$

$A \cdot (A \times B) = 0$

$A \cdot (B \times C) = (A \times B) \cdot C$

$A \times (B \times C) = B(A \cdot C) - (A \cdot B) C$

→ Applying the ∇ operators

∇T = gradient of T = del-T

$$\nabla T = \left[\frac{\partial T}{\partial x}, \frac{\partial T}{\partial y}, \frac{\partial T}{\partial z} \right]$$

$$\therefore \Delta T = \nabla T \cdot \Delta R = \frac{\partial T}{\partial x} \Delta x + \frac{\partial T}{\partial y} \Delta y + \frac{\partial T}{\partial z} \Delta z.$$

- Theorem 1 :- if $\nabla \times A = 0$ there is a ψ Such that $A = \nabla \psi$

Theorem 2 :- if $\nabla \cdot D = 0$ there is a C Such that $D = \nabla \times C$

Course:- Hardware description languages for FPGA Design

- VHDL logic Design Techniques:-
  - → Introduction
  - → Combinatorial Circuits
  - → Synchrous logic: latches and flip-flops.
  - → Synchronous logic: Counters and Registers.
  - → Interface: Buses and Tri-state Buffers.
  - → Modular design in VHDL
  - → Test Benches in VHDL - is a combinatorial.
  - → Test Benches in VHDL - synchrouns
  - → Memories in VHDL
  - → Finite state Machines in the VHDL
- Free Range VHDL, ch. 5, (16P)
- Free Range VHDL, CH. 6, (14 P)
- Free Range VHDL, Ch 12 (6P)
- Free Range VHDL, CH 10 (12P).