



PMRF- ISSS065/II/2023

FDTD Models with Telegrapher's Equations

Name of the PMRF student

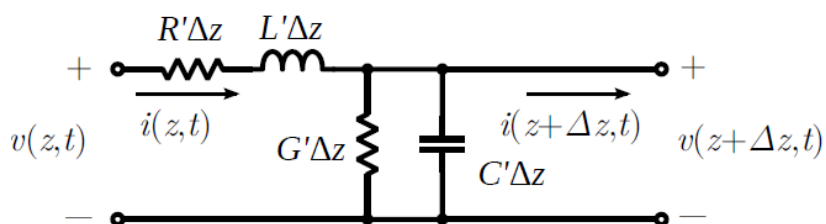
Anand Kumar

Required background of the students taught

Electrical, Electronics, Communication, Instrumentation, Physics, Aerospace, Mathematics

Online session coordinator

Will be chosen from the list of registrants



$$-\frac{\partial}{\partial z}v(z,t) = R' i(z,t) + L' \frac{\partial}{\partial t}i(z,t)$$

$$-\frac{\partial}{\partial z}i(z,t) = G' v(z,t) + C' \frac{\partial}{\partial t}v(z,t)$$

Details of the content of the module

Course Outline:

- I. Review of Transmission Line theory & the Telegrapher's Equations
- II. Introduction to Computational Electromagnetics and 1D-FDTD Models
- III. FDTD Modelling of
 - I. Lossless Transmission Lines
 - II. Lossy Transmission Lines
- IV. Calculation of S-Parameters
- V. FDTD Modelling of Lumped Elements in series/parallel on Transmission Lines
 - I. Resistor
 - II. Capacitor
 - III. Inductor
- VI. FDTD Modelling of Composite Right-Left Handed (CRLH) Transmission Lines

Tutorials and assignments on FDTD simulations.

Schedule of the module

Class Timing: **3:00-5:00 PM (MWF)**
([Course Website](#))

Class Begins: **27th December 2023**

Total Hours: **10 (5 lectures)**

Contact: anandkumar13@iisc.ac.in



Meeting link : Will be shared later

Contact email ID: iss.forum@gmail.com

Registration link:

<https://forms.gle/ZnLscA8JhoAUrQ8e8>