Computer Networks

Lecture 1

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April 1, 2020

Contents

Introduction

Pythagoras Theorem

Let a be the hypotenuse of a right triangle, b and c its *catheti* or legs, then:

$$a^2 = b^2 + c^2 \tag{1}$$

Blocks

Block Example

This is a simple block example.

Alert Example

This is a simple alert block example.

Example Example

This is a simple example block example

Equations

Equation (2) defines the theoretic channel capacity given by the Shannon-Hartley Theorem:

$$C = B \log_2 (1 + \delta) \tag{2}$$

where B is the channel bandwidth and δ is the signal-to-noise ratio (SNR).

Multiple Equations

$$
\begin{aligned}
(a+b)^2 &= 0 && (3)\\
a^2+2ab+b^2 &= 0 &&\\
a^2+b^2 &= -2ab && (4)
\end{aligned}
$$

Matrices

$$M = \begin{bmatrix} m_{1,1} & m_{1,2} & \dots & m_{1,N} \\ m_{2,1} & m_{2,2} & \dots & m_{1,N} \\ \vdots & \vdots & \ddots & \vdots \\ m_{N,1} & m_{N,2} & \dots & m_{N,N} \end{bmatrix} \quad (5)$$

Figures

How to Include Figures

There are basically two ways to include figures in a beamer presentation:

- When there are little to no details that are small or when the figure size does not matter, one may include it inside a frame as shown in the next slide.
- When there are many details and the figure must be enlarged one may use a full frame to show the figure and ignore frame default content as shown next.

Figures inside

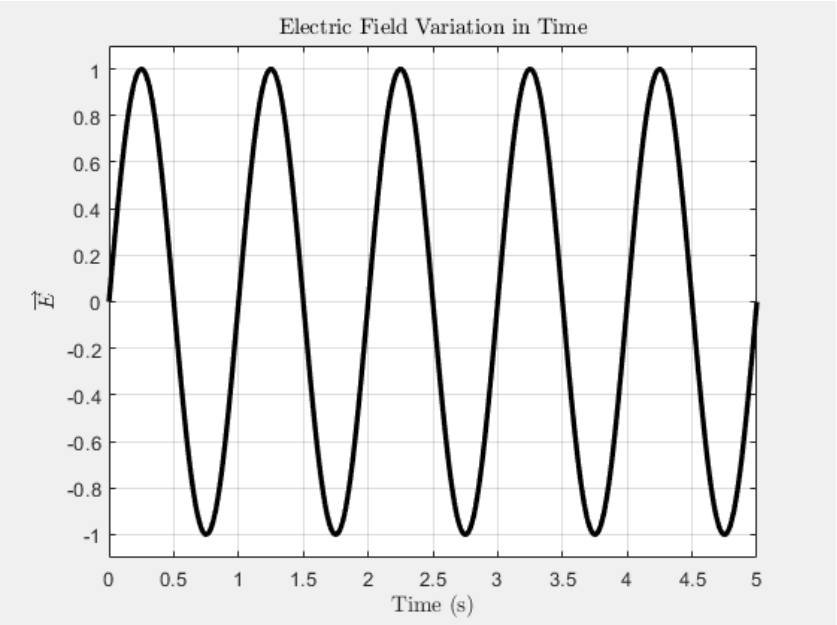
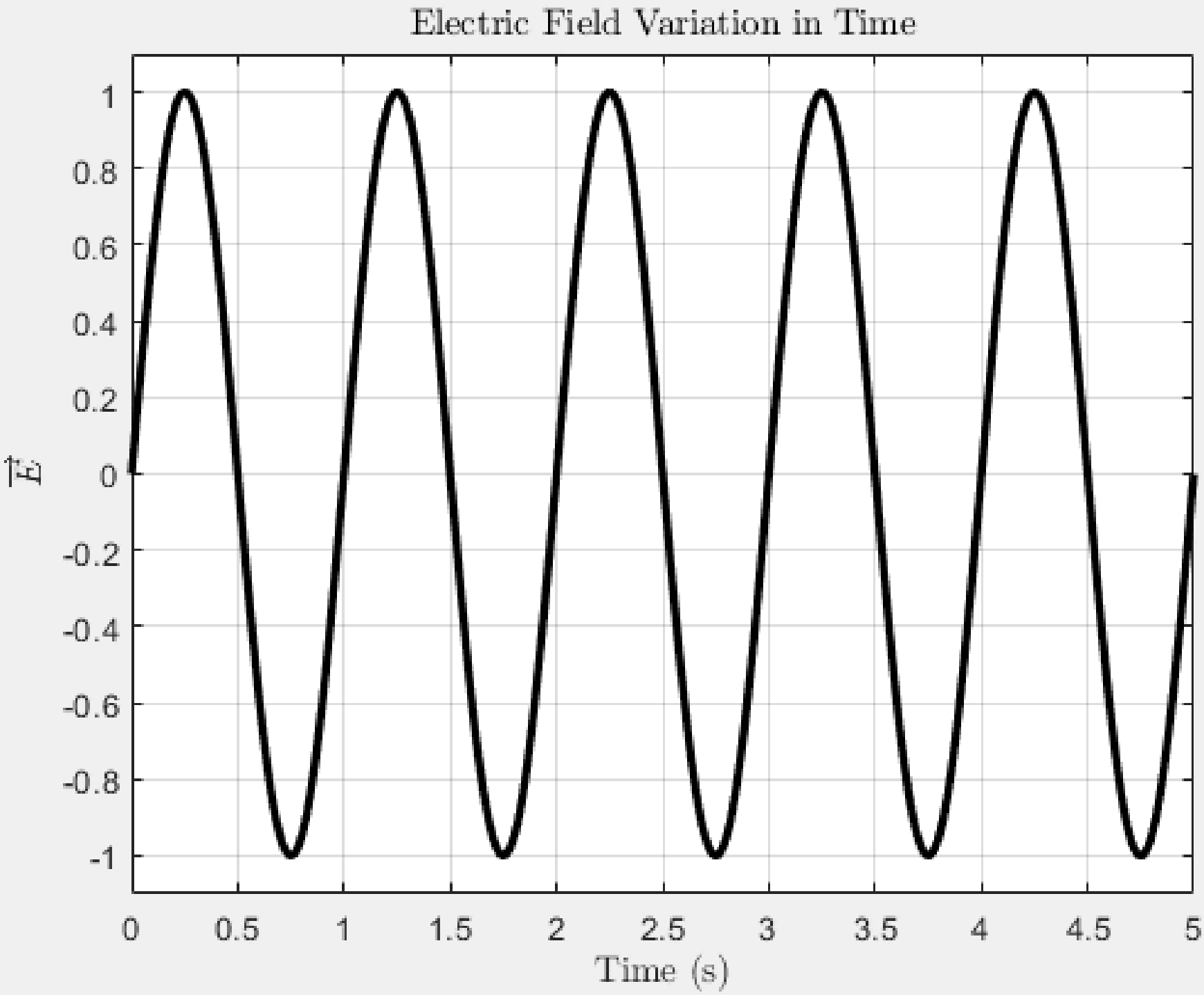


Figure: Example of a Figure inside a frame.


Electric Field Variation in Time
E
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
0
0.5
1
1.5
2
2.5
3
3.5
4
4.5
5
Time (s)

Tables

A	B
C	D

Table: Table Example.

Algorithms

Algorithm 1 pseudocode for the calculation of

```
1: for i = 1 to N do
2:     for j = 1 to JJJ do
3:         energy[i*JJJ+j] = interpolate(AAA[i*JJJ+j], ZZZ)
4:     end for
5: end for
```

Code Examples

```
int main() {
    printf("Hello World");
    return 0;
}
```

References

Some references to showcase [allowframebreaks] [4, 2, 5, 1, 3]

References I

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