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# Title

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## 1 Introduction

This is just a very simple latex document which shows some of what can be done.

- Environments
- Examples

### 1.1 Mathematic Environments

You can typeset equations in many different ways,

$$\mathbf{F} = m\mathbf{a}.$$

Or you can write equations in a line of text  $\mathbf{F} = m\mathbf{a}$ .

If you wanted to include an equation number ...

$$\mathbf{F} = m\mathbf{a} \tag{1}$$

You can even work with multiple lines

$$\begin{aligned} \mathbf{F} &= m\mathbf{a} \\ &= m\dot{\mathbf{v}} \end{aligned} \tag{2}$$

Reading the .tex file along with this .pdf should point out that there are different environments in which you can type equations such as using eqnarray for equation (2) from section 1.1. This is not an extensive list there are many more which can be found on the internet you should hunt out and use ‘align’.

### 1.2 Examples

Here are a few examples covering basic mathematics you may encounter.

$$f(x, t) = g(x - vt) + h(x + vt) \tag{3}$$

$$\nabla \cdot \mathbf{A}(\mathbf{x}, \mathbf{y}, \mathbf{z}) = \frac{\partial}{\partial x} \mathbf{A}(\mathbf{r})\hat{x} + \frac{\partial}{\partial y} \mathbf{A}(\mathbf{r})\hat{y} + \frac{\partial}{\partial z} \mathbf{A}(\mathbf{r})\hat{z} \tag{4}$$

$$\begin{aligned} \ln e^x &= x \\ e^x &= \sum_{n=0}^{\infty} \frac{(x)^n}{n!} \\ \ln(x+1) &\approx x - \frac{x^2}{2} + \frac{x^3}{3} \quad |x| < 1 \end{aligned}$$

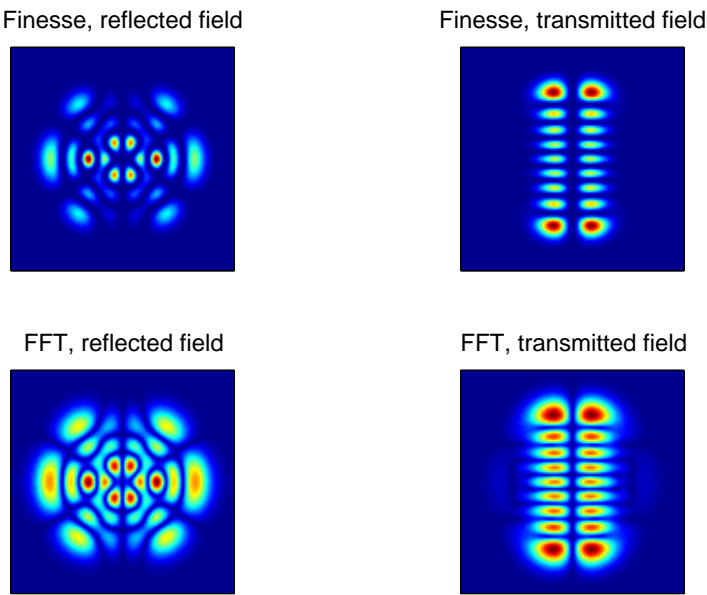


Figure 1: This is an example for including a figure.

2 Another section

Another section with a figure and a table. The figure 1 is **floating!** Do not try to control its position yourself! The table is a simple example, also tables can be floating, however, the following one is not:

mode	LG00	LG33
ratio	2.63	4.31

You can include source code or text output from your programs in the following way (this example just shows the output of the ‘ls’ command on a Linux system):

```
black:LatexExample adf$ ls
UoBnote.cls          UoBnoteexample.pdf UoBnoteexample.tex beams.pdf          bhamlogo.pdf
black:LatexExample adf$
```