# Hello World!

Your Name

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## 1 Getting Started

**Hello World!** Today I am learning LaTeX. LaTeX is a great program for writing math. I can write in line math such as $a^2 + b^2 = c^2$. I can also give equations their own space:

$$\gamma^2 + \theta^2 = \omega^2 \tag{1}$$

"Maxwell's equations" are named for James Clark Maxwell and are as follow:

$$\vec{\nabla} \cdot \vec{E} = \frac{\rho}{\epsilon_0} \qquad \text{Gauss's Law} \tag{2}$$

$$\vec{\nabla} \cdot \vec{B} = 0 \qquad \text{Gauss's Law for Magnetism} \tag{3}$$

$$\vec{\nabla} \times \vec{E} = -\frac{\partial \vec{B}}{\partial t} \qquad \text{Faraday's Law of Induction} \tag{4}$$

$$\vec{\nabla} \times \vec{B} = \mu_0 \left( \epsilon_0 \frac{\partial \vec{E}}{\partial t} + \vec{J} \right) \qquad \text{Ampere's Circuital Law} \tag{5}$$

Equations 2, 3, 4, and 5 are some of the most important in Physics.

## 2 What about Matrix Equations?

$$\begin{pmatrix} a_{11} & a_{12} & \dots & a_{1n} \\ a_{21} & a_{22} & \dots & a_{2n} \\ \vdots & \vdots & \ddots & \vdots \\ a_{n1} & a_{n2} & \dots & a_{nn} \end{pmatrix} \begin{bmatrix} v_1 \\ v_2 \\ \vdots \\ v_n \end{bmatrix} = \begin{matrix} w_1 \\ w_2 \\ \vdots \\ w_n \end{matrix}$$

## 3 Tables and Figures

Creating a Table is not unlike creating a matrix:

Table 1: This is a table that shows how to create different lines as well as different justifications

| $x$ | 1 | 2 | 3 |
|---|---|---|---|
| $f(x)$ | 4 | 8 | 12 |
| f(x) | 4 | 8 | 12 |

Table 2: This is a table without horizontal lines. You may use this for modern style.

| $x$ | 1 | 2 | 3 |
|---|---|---|---|
| $f(x)$ | 4 | 8 | 12 |
| f(x) | 4 | 8 | 12 |

Figure 1: One Day Trip in Bern

# 4 Bibliography

You will probably want references in your document so that you can cite articles like [1, 2, 3, 4, 5]

# References


[1] M. Frenkel, M. Avellan, and Z. Guo, "Fine temperature measurement and fabrication of on-chip whispering-gallery mode micro-sensors," in *ASME 2013 4th International Conference on Micro/Nanoscale Heat and Mass Transfer, MNHMT 2013*, American Society of Mechanical Engineers (ASME), 2013. Conference Proceedings.

[2] M. Frenkel, M. Avellan, and Z. Guo, "Optical whispering-gallery mode phenomenon as a composite sensor with applications to direct on-chip thermal sensing," in *ASME 2013 Heat Transfer Summer Conf.Collocated with the ASME 2013 7th Int.Conf.on Energy Sustainability and the ASME 2013 11th Int.Conf.on Fuel Cell Science, Engineering and Technology, HT 2013*, vol. 4, 2013. Conference Proceedings.

[3] M. Frenkel, M. Avellan, and Z. Guo, "Temperature sensing of joule heating inside an optical whispering-gallery mode micro-annulus," in *ASME 2012 Heat Transfer Summer Conf.Collocated with the ASME 2012 Fluids Engineering Div.Summer Meeting and the ASME 2012 10th Int.Conf.on Nanochannels, Microchannels and Minichannels, HT 2012*, vol. 2, pp. 823–826, 2012. Conference Proceedings.

[4] M. Frenkel, M. Avellan, and Z. X. Guo, "Whispering-gallery mode composite sensors for on-chip dynamic temperature monitoring," *MEASUREMENT SCIENCE AND TECHNOLOGY*, vol. 24, no. 7, 2013.

[5] M. Frenkel and Z. Guo, "On-chip, dynamic, and cryogenic temperature monitoring via PDMS micro-bead coatings," *Journal of Polymer Science Part B: Polymer Physics*, vol. 54, no. 12, pp. 1118–1124, 2016.