

Fangbo's L^AT_EX template

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1 Introduction

aaaa

2 Spacing and font size

2.1 For paragraph

The most useful three commands

```
\setlength{\parindent}{0pt}    %indent space  
\setlength{\parskip}{1em}      %top, bottom space  
\renewcommand{\baselinestretch}{1.0} % line spacing
```

2.2 For heading

use package *titlesec* and commands *titleformat*, *titlespacing*

```
\usepackage{titlesec}  
\titleformat{\section}{\normalfont\large\bfseries}{\thesection}{1em}{}  
\titleformat{\subsection}{\normalfont\normal\bfseries}{\thesubsection}{1em}{  
  }{}  
\titlespacing\section{0pt}{12pt plus 4pt minus 2pt}{0pt plus 2pt minus 2pt}  
\titlespacing\subsection{0pt}{12pt plus 4pt minus 2pt}{0pt plus 2pt minus 2  
  pt}
```

3 Colored hyperlinks for figures, tables, citations

use hyperref package to change the default color and set hyperlinks

```
\usepackage[  
  colorlinks=true, urlcolor=purple, citecolor=green, linkcolor=blue]{  
  hyperref}
```

4 Citation

1. write and cite a reference in this file itself. [1]

```
\begin{thebibliography}{9}  
\bibitem{sett}  
Arezoo Sadrinezhad, Kallol Sett and S. I. Hariharan.  
Efficient solution algorithms for multiaxial probablistic elasto-plastic  
constitutive simulations of soils.  
\textit{Int J Numer Anal Mech Geomech}. 2017; 0:1-21.  
\end{thebibliography}
```

5 Display code

In the preamble part, paste this

```
\usepackage{listings}  
\lstset  
{  
    breaklines=true,  
    basicstyle=\tt\scriptsize,  
    keywordstyle=\color{magenta},  
    identifierstyle=\color{blue},  
    frame=single  
}
```

When pasting code in document, use `begin{lstlisting}` and `end{lstlisting}`

```
clc; clear;  
leftbound=-20; rightbound=20; meshpoint=2000;  
stressmesh=linspace(leftbound, rightbound, meshpoint);  
% standard normal assumption;  
u00=exp(-stressmesh.*stressmesh/2)/sqrt(2*pi);  
timestart=10; dt=0.01;  
N1=100; N2=1;
```

6 Equations

6.1 one short equation (use *equation*)

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

```
\begin{equation}  
c=a+b  
\end{equation}
```

6.2 one long equation (use *multiline*)

$$p(x) = 3x^6 + 14x^5y + 590x^4y^2 + 19x^3y^3 + 590x^4y^2 + 19x^3y^3 \\ - 12x^2y^4 - 12xy^5 + 2y^6 - a^3b^3 \tag{2}$$

```
\begin{multline}  
p(x) = 3x^6 + 14x^5y + 590x^4y^2 + 19x^3y^3 + 590x^4y^2 + 19x^3y^3\\ - 12x^2y^4 - 12xy^5 + 2y^6 - a^3b^3  
\end{multline}
```

6.3 multiple equations (use *eqnarray*, *align*, *gather*)

$$a = b + c \tag{3}$$

$$= d + e \tag{4}$$

```
\begin{align}  
a &= b + c \\ &= d + e  
\end{align}
```

$$2x - 5y = 8 \\ 3x^2 + 9y = 3a + c$$

```
\begin{gather}
2x - 5y = 8 \\
3x^2 + 9y = 3a + c
\end{gather}
```

$$a = b + c \tag{5}$$

$$= d + e \tag{6}$$

```
\begin{eqnarray}
a &= & b + c \\
&= & d + e
\end{eqnarray}
```

Note that *align* only needs one `&`, *eqnarray* needs two `&`. Although the above commands work most of the time, it is recommended to use *IEEEeqnarray*. Read << How to typeset equations in Latex, Stefan Moser>> for typing complex equations.

$$N_{(1)m}^{q^{eq}} = P[f > 0] N_{(1)m}^{q^{ep}} \tag{7}$$

$$N_{(2)mn}^{q^{eq}} = P[f > 0] N_{(2)mn}^{q^{ep}} \tag{8}$$

```
\begin{IEEEeqnarray}{rCl}
N_{(1)m}^{q^{eq}} &=& P[f>0] N_{(1)m}^{q^{ep}} \\
N_{(2)mn}^{q^{eq}} &=& P[f>0] N_{(2)mn}^{q^{ep}}
\end{IEEEeqnarray}
```

6.4 Collection of some equations

$$D_{ijkl} = \begin{cases} a \\ b \end{cases} \tag{9}$$

```

\begin{eqnarray}
D_{ijkl} =
\left\{
\begin{array}{ll}
a & \\
b &
\end{array}
\right.
\end{eqnarray}

```

$$x = y \qquad w = z \qquad a = b + c \qquad (10)$$

$$2x = -y \qquad 3w = \frac{1}{2}z \qquad a = b \qquad (11)$$

$$-4 + 5x = 2 + y \qquad w + 2 = -1 + w \qquad ab = cb \qquad (12)$$

```

\begin{align}
x&=y & & w &=z & & a &=b+c \\
2x&=-y & & 3w&=\frac{1}{2}z & & a &=b \\
-4 + 5x&=2+y & & w+2&=-1+w & & ab&=cb
\end{align}

```

7 Making handouts for beamer presentations

Ever wondered how to avoid the overlays when you want a printout from your beamer presentation? Just put the handout option in your beamer presentation.

```

\documentclass[12pt,handout]{beamer}

```

If you then want to also print everything on one page (as Steve did for his Away Day talk) then just do this

```

\documentclass[a4paper]{article}
\usepackage{pdfpages}

\begin{document}
\includepdf[pages=1 -last,nup=2x2,landscape=false,frame=true,
             noautoscale=true,scale=0.6,delta=0mm 5mm]{mypresentation.pdf}
\end{document}

```

where mypresentation.pdf is your beamer presentation which you created with the handout options (so without overlays). In this example 4 beamer slides are printed on one page (2x2).

References

- [1] Arezoo Sadrinezhad, Kallol Sett and S. I. Hariharan. Efficient solution algorithms for multiaxial probabilistic elasto-plastic constitutive simulations of soils. *Int J Numer Anal Mech Geomech.* 2017; 0:1-21.
- [2] Chuli Fu, Xiangtuan Xiong and Zhi Qian. Fourier regularization for a backward heat equation. *Journal of Mathematical Analysis and Applications.* 2007; 331:471-480.