

# Webinar on

## “Scientific Writing Using LaTeX ”

April 26, 2020 at 11:00 am (Nepali Time)



**Host: Devendra Raj Upadhyay**

**Lecturer**

**Department of Physics**

**Amrit Campus, Tribhuvan University**

**Kathmandu, Nepal**



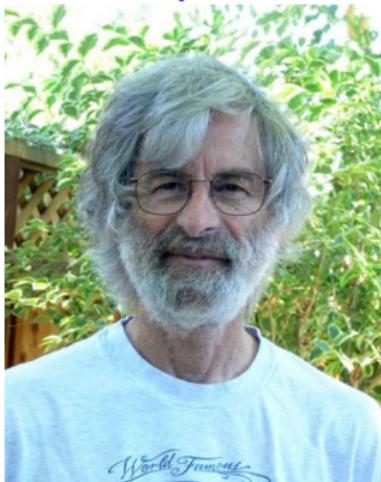
# Outlines

- **Introduction**
- **Documents**
- **Win edit**
- **Texmaker**
- **TeXstudio**
- **JabRef**
- **Applications**
- **Queries ???**



# Introduction(Cont..)

- **LaTeX is a high quality typesetting system which can produce modern technical and scientific documents such as Article, Report, Thesis, Term Paper, Project work, Book, and Beamer Presentation.**
- Developed by **Leslie B. Lamport** (born February 7, 1941) is an American computer scientist.<sup>1</sup>



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The **LATEX** Project

<b>Original author(s)</b>	Leslie Lamport
<b>Initial release</b>	1984; 36 years ago
<b>Repository</b>	<a href="https://github.com/latex3/latex2e">github.com/latex3/latex2e</a>
<b>Type</b>	Typesetting
<b>License</b>	LaTeX Project Public License (LPPL)
<b>Website</b>	<a href="https://www.latex-project.org">latex-project.org</a>

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<sup>1</sup><https://en.wikipedia.org/wiki/LaTeX>(April, 2020)

## Introduction(Cont..)

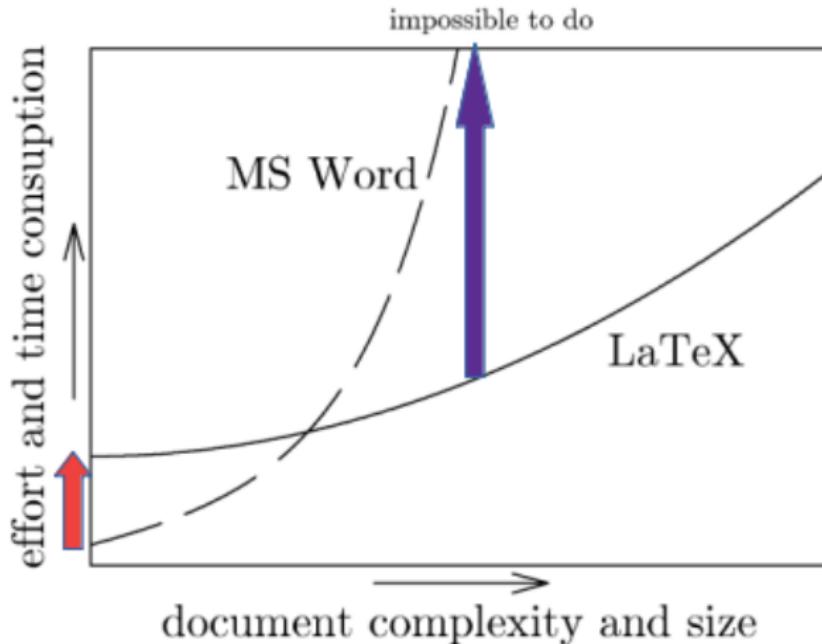
- Uses commands to create mathematical symbols.
- Microsoft Word is based on a principle called “What you see is what you get” (WYSIWYG), which means that the user immediately sees the document on the screen as it will appear on the printed page.
- LaTeX is based on the principle of “What you get is what you mean” (WYGIWYM), which implies that the document is not directly displayed on the screen and changes, such as format settings, are not immediately visible.<sup>2</sup>
- The final document is obtained by converting the source file (.tex file) into a pdf file.
- It is widely used in academia for the communication and publication of scientific and technical documents.

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<sup>2</sup>Knauff, M., & Nejasmic, J., An Efficiency Comparison of Document Preparation Systems Used in Academic Research and Development. PloS one, 9(12), (2014).



# Why not MS Word?



3

<sup>3</sup><https://www.johndcook.com/blog/2008/04/03/microsoft-word-and-latex/>



# Documents

- Article
- Book
- Report
- Thesis(Master, PhD)
- Term Paper
- Manual
- Tech Report
- Project Work
- Miscellaneous



# Latex Documents

Latex Document - Google Scholar

https://scholar.google.com/scholar?hl=en&as\_sdt=0%2C5&q=Latex+Document&oq=Latex

Articles      About 423,000 results (0.02 sec)

Any time      Since 2020      Since 2019      Since 2016      Custom range...  
Sort by relevance      Sort by date  
 include patents       include citations  
 Create alert

**[PDF] A Guide to {LaTeX}--Document**      [PDF] psu.edu  
H Kopka, PW Daly - 1995 - Citeseer  
1 Introduction Bibliographic references are an important, sometimes fundamental, part of academic documents. In the past, preparation of a bibliography was difficult and tedious mainly because the entries were numbered and ordered by hand. LATEX, which was developed with this kind ...  
☆ 99 Cited by 915 Related articles All 59 versions

**[BOOK] LATEX: a document preparation system: user's guide and reference manual**      [PDF] cern.ch  
L Lamport - 1994 - cds.cern.ch  
Carrying On 3.1 Changing the Type Style 3.2 Symbols from Other Languages 3.2.1 Accents 3.2.2 Symbols 3.3 Mathematical Formulas 3.3.1 Some Common Structures Subscripts and Superscripts Fractions Roots Ellipsis 3.3.2 Mathematical Symbols Greek Letters Calligraphic Letters A Menagerie ...  
☆ 99 Cited by 3662 Related articles All 121 versions

**Scratchable conductive latex document scanner**      [PDF] googleapis.com  
JM Gatto, TB De Courssou - US Patent 6,107,913, 2000 - Google Patents  
A sensor and a method for determining the state of conductive ink patterns applied to scratchable latex layers of instant-win tickets and other documents having scratchable latex layers affixed thereon. The device and method are based upon the generation of a radio ...  
☆ 99 Cited by 41 Related articles All 2 versions

**[BOOK] LATEX line by line: tips and techniques for document processing**  
A Diller - 1993 - dl.acm.org  
An easy-to-follow tutorial on the most popular text processing system used in the academic community. Explains formatting fundamentals including more complex techniques for presenting difficult mathematical formulas. Contains templates (most of them also available ...  
☆ 99 Cited by 63 Related articles All 3 versions



# Thesis(Cont..)

(all capital letters, new times roman, font 24, bold)

## TITLE OF YOUR THESIS

Students of other colleges should replace this by 'Dean Office, Institute of Science & Technology'

(new times roman, font 14, bold)

A Dissertation

Submitted to the Central Department of Physics, Tribhuvan University, Kirtipur in the Partial Fulfillment for the Requirement of Master's Degree of Science in Physics

TU Logo At the centre



font 20, bold, new times roman

By Amrit Kaple November, 2011

Capital letter, Bold, font size 28

Font: All New Times Roman

## TITLE OF YOUR TERM PAPER

Normal, font size 18

A Term Paper

Submitted to Central Department of Physics  
Tribhuvan University, Kirtipur  
in Partial Fulfillment for the Requirement of  
Master's Degree of Science in Physics

Write your college name

Bold, font size 18

By  
Bikash Khatiwada  
(Examination Roll Number)  
June, 2019



# Thesis(Cont..)

**INTERACTION BETWEEN AMBIENT  
INTERSTELLAR MEDIUM AND  
ASYMPTOTIC GIANT BRANCH STARS  
AT LATITUDE  $32.47^{\circ}$  &  $40.67^{\circ}$**

A Dissertation

Submitted to Central Department of Physics,  
Tribhuvan University, Kirtipur in the partial fulfillment for the  
Requirement of Master Degree of Science in Physics



By  
**Devendra Raj Upadhyay**  
February, 2015

**COMPUTATIONAL STUDY OF PHASE  
TRANSITION IN 2D MAGNETIC  
SYSTEM IMPLEMENTING MONTE  
CARLO**

A Project Work

Submitted to the Office of the Controller of Examination,  
Tribhuvan University, Balkhu in the Partial Fulfillment for the  
Requirement of Bachelor's Degree of Science in Physics



By  
**SUMAN KANDEL**  
TU Reg. No.: 5 - 2 - 37-850-2015  
Symbol No. : 500371124  
July, 2019



# WinEdt(Cont..)

WinEdt is a powerful and versatile all-purpose text editor for Windows with a strong predisposition towards the creation and compilation of LaTeX documents...



<b>Developer(s)</b>	Aleksander Simonic
<b>Stable release</b>	10.3 [Build: 20180507] / 07 May 2018
<b>Operating system</b>	Windows
<b>Type</b>	LaTeX
<b>License</b>	shareware
<b>Website</b>	<a href="https://www.winedt.com">www.winedt.com</a> 

5 6

<sup>5</sup><https://www.winedt.com/>(April, 2020).

<sup>6</sup><https://en.wikipedia.org/wiki/WinEdt>(April, 2020).



# WinEdit(Cont..)

The screenshot shows the WinEdit 10.0 interface with a LaTeX document titled "Thesis.tex". The document contains code related to Lomonosov functions and weak neighborhoods. A context menu is open over a section of the code, listing various TeX engines and formats: PDFTeXify, PDFLaTeX, PDFTeX, Texify, LaTeX, TeX, AMSTeX, ConTeXt, LuaTeX, XeTeX, and XeTeX. The main window displays the LaTeX code with color-coded syntax highlighting. The status bar at the bottom shows the file name "Thesis.tex", line number "1:1", page count "908", and encoding "UTF-8".

```
\begin{defn}
Let $S$ be a basic weak neighborhood of a vector $x$. Then $S$ is called a weak base if $\forall \epsilon > 0 \exists r > 0 \forall y \in S \exists n \in \mathbb{N} \forall k \in \{1, \dots, n\} \exists h_k \in \mathbb{R}^d$ such that $\|y - x\|_p < r$ and $\|y - x\|_p + \|x - h_k\|_p < \epsilon$.
\end{defn}

\begin{defn}
A continuous nonnegative function $f: \mathbb{R}^d \rightarrow [0, 1]$ is called a continuous indicator function of $S$ if $f(x) = 1$ for all $x \in S$ and $f(x) = 0$ for all $x \notin S$.
\end{defn}
```



# Texmaker

Texmaker is a free, modern and cross-platform LaTeX editor for linux, macosx and windows systems that integrates many tools needed to develop documents with LaTeX, in just one application.

The screenshot shows the Texmaker interface. On the left is a panel with mathematical symbols categorized by type. The main window displays a LaTeX source code file named 'sample.tex'. The code includes sections for abstracts, lists, equations, and theorems, demonstrating various LaTeX commands and document structure. To the right is a preview window showing the rendered document, which includes a title page with the author's name and date, an abstract section, and a detailed list section. The preview also shows the rendered mathematical symbols and expressions from the source code.

```
\documentclass{article}
\begin{document}
\title{Sample \LaTeX -File}
\author{David P. Little}
\maketitle

\begin{abstract}
This document represents the output from the file ``sample.tex'' once compiled using your \LaTeX compiler. This file should serve as a good example of the basic structure of a ``.tex'' file as well as many of the most basic commands needed for typesetting documents involving mathematical symbols and expressions. For more of a description on how each command works, please consult the links found on our course webpage.
\end{abstract}

\begin{list}{}
\item \textbf{List Item One (List)}
\item \textbf{List Item Two Point (Bold Face)}
\item \textbf{List Item Second Point (Italic)}
\item \textbf{List Item Third Point (Large Font)}
\end{list}

\begin{list}{}
\item \textbf{List Item Small First Subpoint (Small Font)}
\item \textbf{List Item Tiny Second Subpoint (Tiny Font)}
\item \textbf{List Item Huge Third Subpoint (Huge Font)}
\end{list}

\begin{list}{}
\item \textbf{List Item Bullet Point (Sans Serif)}
\item \textbf{List Item Circle Point (Small Caps)}
\end{list}

\end{list}

\begin{equation}
\sum_{i=0}^n x^i = \sum_{i=0}^n \binom{n}{i} x^i
\end{equation}

\begin{theorem}[Binomial Theorem]
For any nonnegative integer  $n$ , we have

$$\sum_{i=0}^n x^i = \sum_{i=0}^n \binom{n}{i} x^i$$

\end{theorem}

\begin{taylor}[Taylor Series]
The Taylor series expansion for the function  $f(x)$  is given by


```



# TeXstudio

**TeXstudio** is an integrated writing environment for creating LaTeX documents. Our goal is to make writing LaTeX as easy and comfortable as possible. Therefore TeXstudio has numerous features like syntax-highlighting, integrated viewer, reference checking and various assistants.

**For Ubuntu Linux:** Use command  
sudo apt-get update

**TeXstudio:** sudo apt-get install texstudio

**For windows users:** download and install

**texstudio:** <https://texstudio.org/>

**miktex:** <https://miktex.org/download>

9



# TeXstudio(Thesis/Report)

File Edit |defix Tools LaTeX Math Wizards Bibliography Macros View Options Help

Meenashree.tex X

```
\documentclass[12pt,a4paper]{report}
\usepackage[latin1]{inputenc}
\usepackage{amsmath}
\usepackage{amsfonts}
\usepackage{amsymb}
\usepackage{graphicx}
\author{Devendra}
\renewcommand{\bibname}{References}
\usepackage[left = 1.5in, right = 2.5cm, top = 2.5cm, bottom = 2.5cm]{geometry}
\begin{document}
\begin{titlepage}
\centering
\Huge\bf STUDY OF DUST PROPERTIES AROUND C-RICH AGB STAR : IRAS 04427+4951
\vspace{0.1in}
\begin{center}
\Large\bf A Project Work\\
\Large\bf Submitted to the Dean Office,
Institute of Science and Technology,
Tribhuvan University, Kirtipur in the Partial Fulfillment for the
Requirement of Master's Degree of Science in Physics
\end{center}
\end{titlepage}

```

Line: 1 Column: 0 INSERT

Messages Log Preview Search Results

1 of 10

STUDY OF DUST  
PROPERTIES AROUND  
C-RICH AGB STAR : IRAS  
04427+4951

A Project Work

Submitted to the Dean Office, Institute of Science and Technology, Tribhuvan University, Kirtipur in the Partial Fulfillment for the Requirement of Master's Degree of Science in Physics

By  
Meenashree Khanal  
February, 2019



# TeXstudio(Thesis/Report)

File Edit Idefix Tools LaTeX Math Wizards Bibliography Macros View Options Help

Meenashree.tex X

```
\end{center}
\end{titlepage}
\pagenumbering{roman}
\addcontentsline{toc}{chapter}{Recommendation}
\begin{center}
\includegraphics[width=1cm]{logo}
\end{center}
\begin{center}
\Large{\bfseries Recommendation}
\end{center}
It is certified that {\bfseries Ms. Meenashree Khanal} has carried out the project work entitled {\bfseries ``STUDY OF DUST PROPERTIES AROUND C-RICH AGB STAR : IRAS 04427+4951''} under my supervision and guidance.\\" [0.5cm]
I recommend the project work in the partial fulfillment for the requirement of Master's Degree of Science in Physics.\\"[2cm]

\noindent\rule{180pt}{1pt} \\
{ \bfseries Mr. Devendra Raj Upadhyay} \\
Lecturer\\
(Supervisor)\\
Department of Physics\\
Amrit Campus, Tribhuvan University\\
```

Line: 51 Column: 22 INSERT

Messages Log Preview Search Results

Process started: pdflatex -synctex=1 -interaction=nonstopmode "Meenashree.tex"

1 of 10

STUDY OF DUST  
PROPERTIES AROUND  
C-RICH AGB STAR : IRAS  
04427+4951  
A Project Work  
Submitted to the Dean Office, Institute of  
Science and Technology, Tribhuvan University,  
Kirtipur in the Partial Fulfillment for the  
Requirement of Master's Degree of Science in  
Physics

By  
Meenashree Khanal  
February, 2019



# TeXstudio(Proposal)

File Edit \defix Tools LaTeX Math Wizards Bibliography Macros View Options Help

SWUL.tex X Proposal 2019.tex X

```
\documentclass[fleqn,a4paper,12pt,oneside]{article}
\usepackage{graphicx}
\usepackage{float}
\usepackage{amsmath}
\usepackage{amsfonts}
\usepackage{amssymb}
\usepackage{table}{xcolor}
\usepackage[left = 1.5in, right = 2.5cm, top = 2.5cm, bottom = 2.5cm]{geometry}
\usepackage[font = footnotesize, labelfont = bf]{caption}

\begin{document}
    \title{\bf STUDY OF AMBIENT INTERSTELLAR MEDIUM AND ASYMPTOTIC GIANT BRANCH STARS AT DIFFERENT LATITUDES}
    \author{\textbf{A Research Proposal}
        \\
        \\
        Submitted to the University Grants Commission, \\\textbf{Research} Division, \\\textbf{Sanothimi, Bhaktapur, Nepal} \\
        For the UGC Small RDI Grant
        \\
        \\
        \includegraphics[width=2cm]{logo}}

```

Line: 1 Column: 0 INSERT

Messages Log Preview Search Results

Process started: pdflatex -synctex=1 -interaction=nonstopmode "Proposal 2019".tex

Process exited normally

1 of 18

STUDY OF AMBIENT  
INTERSTELLAR MEDIUM AND  
ASYMPTOTIC GIANT BRANCH  
STARS AT DIFFERENT LATITUDES

A Research Proposal

Submitted to the University Grants Commission,  
Research Division,  
Sanothimi, Bhaktapur, Nepal  
For the UGC Small RDI Grant



By  
Devendra Raj Upadhyay  
Lecturer  
Amrit Campus, Tribhuvan University,  
Kathmandu, Nepal

April 25, 2020

# TeXstudio(Proposal)

File Edit Define Tools LaTeX Math Wizards Bibliography Macros View Options Help

SWUL.tex X Proposal 2019.tex X

```
\includegraphics[width=2cm]{logo}
\\
\\
By}

\begin{titlepage}
\vspace{1cm}
\date{\bf Devendra Raj Upadhyay\\Lecturer\\ Amrit Campus, Tribhuvan University,
\\Kathmandu, Nepal\\ \vspace{1cm}\today}
\setlength{\textheight}{23.5cm} \maketitle
\setlength{\textheight}{23cm}

\clearpage
\pagenumbering{roman}

\tableofcontents
\pagebreak
\pagenumbering{arabic}

\section{Purpose}
The proposed research work is entitled {\bf ``STUDY OF AMBIENT INTERSTELLAR MEDIUM AND ASYMPTOTIC GIANT BRANCH STARS AT DIFFERENT LATITUDES''}.

\section{Abstract}
In this research work we will discuss how different physical parameters like flux, temperature, mass
```

Line: 36 Column: 92 INSERT

Messages Log Preview Search Results X

STUDY OF AMBIENT  
INTERSTELLAR MEDIUM AND  
ASYMPTOTIC GIANT BRANCH  
STARS AT DIFFERENT LATITUDES

A Research Proposal

Submitted to the University Grants Commission,  
Research Division,  
Sanothimi, Bhaktapur, Nepal  
For the UGC Small RDI Grant.



By  
Devendra Raj Upadhyay  
Lecturer  
Amrit Campus, Tribhuvan University,  
Kathmandu, Nepal

April 25, 2020



# TeXstudio(Beamer Presentation)

/home/devendra/Desktop/SWUL/SWUL.tex - TeXstudio

File Edit Idefix Tools LaTeX Math Wizards Bibliography Macros View Options Help

SWUL.tex X

```
\documentclass{beamer}
\usepackage{Madrid}
\usepackage{tikz}
\usepackage{amsmath}
\usepackage{graphics}
\renewcommand{\bibname}{References}
\author{\bf{D. R. Upadhyay}}
\institute{Amrit Campus,TU}
\logo{\includegraphics[height= 0.75cm]{SSTUL}\Huge\bf{Equilibrium}}
\title[SSTUL]{\Huge\bf{Equilibrium}}
\subtitle{A Presentation}
\date{\today}
\begin{document}
\begin{frame}
\begin{center}
\Huge\bf{\color{blue}
```

Line: 64 Column: 53 INSERT

Messages Log Preview Search Results

Process started: pdflatex -synctex=1 -interaction=

Process exited normally

Quick Start

Class Options Geometry

Document Class report

Typeface Size 10pt

Paper Size a4paper

Encoding latin1

AMS Packages  makeidx Package  graphicx Package

Author

Title

Other Options

landscape  
draft  
final  
oneside  
twoside  
openright  
openany  
onecolumn  
twocolumn

OK Cancel

Pages 1 to 3 of 12 94% LT en US UTF-8 Ready Automatic

Webinar on  
scientific Writing Using LaTeX  
April 26, 2020 at 11:00 am (Nepali Time)  
  
Host: Devendra Raj Upadhyay  
Lecturer  
Department of Physics  
Amrit Campus, Tribhuvan University  
Kathmandu, Nepal

# TeXstudio(Beamer Presentation)

File Edit Idefix Tools LaTeX Math Wizards Bibliography Macros View Options Help

SWUL.tex X

```
\subtitle{A Presentation}
\date{\today}
\begin{document}
\begin{frame}
\begin{center}
{\Huge\bf{ \color{blue}Webinar on \color{red}\LARGE ``Scientific
Writing Using LaTeX
''}}\vspace{0.2cm}
\color{blue}\large April 26, 2020 at \color{red}11:00 am (Nepali
Time)\vspace{0.2cm}
\includegraphics[height=2cm]{Tex}\vspace{0.1cm}
\bf{\Large{\color{red}{Host: \color{blue}Devendra Raj Upadhyay}}}
\\Lecturer\color{blue} Department of Physics\ Amrit Campus,
Tribhuvan University\\
Kathmandu, Nepal\\
\end{center}
\end{frame}

\begin{frame}
\frametitle{\bf Outlines}
\begin{itemize}
\bfseries

```

Line: 31 Column: 26 INSERT

1 of 38

## Webinar on

“Scientific Writing Using LaTeX”

April 26, 2020 at 11:00 am (Nepali Time)



**Host:** Devendra Raj Upadhyay  
Lecturer  
Department of Physics  
Amrit Campus, Tribhuvan University  
Kathmandu, Nepal

D. R. Upadhyay (Amrit Campus,TU) SSTUL Agri-26-20

### Outlines



# Jabref

JabRef is an open source bibliography reference manager. The native file format used by JabRef is BibTeX, the standard LaTeX bibliography format. JabRef is a desktop application and runs on the Java VM (version 8), and works equally well on Windows, Linux, and Mac OS X.

For Windows & Mac OS: download and install them

- Jabref: <http://www.jabref.org/>

For Ubuntu Linux:

- Step 1: sudo apt-get update -y
- Step 2: sudo apt-get install -y jabref



Download JabRef latest x +

https://www.fosshub.com/JabRef.html

DATABASE    DEVELOPER TOOLS    DISK ANALYSERS    EBOOK APPS    EMAIL CLIENTS    ENCRYPTION    FTP CLIENTS    SHOW MORE

DATABASE

DOWNLOAD

	FILE	SIZE	VERSION	ANTIVIRUS
JabRef Windows Installer	Signature	335 MB	5.0	0 / 0
JabRef Windows portable	Signature	335.1 MB	5.0	0 / 0
JabRef Debian and Ubuntu	Signature	279.2 MB	5.0	0 / 0
JabRef RPM	Signature	289.1 MB	5.0	0 / 0
JabRef Linux portable	Signature	291 MB	5.0	0 / 0
JabRef Mac OS dmg	Signature	342.8 MB	5.0	0 / 0
JabRef Mac OS pkg	Signature	338.3 MB	5.0	0 / 0
JabRef Mac OS portable	Signature	339.9 MB	5.0	0 / 0

CHANGE LOG    OLDER VERSIONS

<sup>9</sup>text



# Jabref

Activities JabRef ▾

13:50 JabRef - untitled\* (BibTeX mode)

File Edit Search Groups View BibTeX Quality Tools Options Help

search... Filter

untitled

# entrytype author/editor title year journal/booktitle bibtexkey ranking

Select entry type

BibTeX

Article	InBook	Book
Booklet	InCollection	Conference
InProceedings	Proceedings	Manual
MastersThesis	PhdThesis	TechReport
Unpublished	Misc	

-IEEETran

Electronic	IEEETranBSTCTL	Periodical
Patent	Standard	

-ID-based entry generator

ID type: ArXiv

ID:

Generate Cancel

Status: Deleted 1 entry.

## Special Characters

The following symbols are reserved characters, that have a special meaning in LaTeX

\$ & % # \_ { } ~ ^ \ ``

Some of these characters can be used in your documents by adding a prefix backslash (escape character):

\$ & % # \_ { }

\\$ \& \% \# \\_ \{ \}

The other symbols (and many more!) can be printed with special commands in mathematical formulae.

# How to type Mathematics

`\alpha, \beta, \gamma` →  $\alpha, \beta, \gamma$

`x^y` →  $x^y$     `x_y` →  $x_y$     `x_y^z` →  $x_y^z$

`\int_0^\infty` →  $\int_0^\infty$     `\int{\int}` →  $\int \int$

`\frac{\partial u}{\partial x}` →  $\frac{\partial u}{\partial x}$



# Typesetting Equations

$$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$

This is my solution

$$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$

$$\frac{d^2\psi}{dx^2} + \frac{2m}{\hbar^2}(E - V)\psi = 0 \quad (1)$$

```
\begin{equation}
(\nabla^2 - \frac{1}{c^2} \frac{\partial^2}{\partial t^2}) G(\mathbf{X} - \mathbf{X}', t - t') = -\delta(\mathbf{X} - \mathbf{X}', t - t') \delta(t - t')
\end{equation}
```

$$(\nabla^2 - \frac{1}{c^2} \frac{\partial^2}{\partial t^2}) G(\mathbf{X} - \mathbf{X}', \mathbf{t} - \mathbf{t}') = -\delta(\mathbf{X} - \mathbf{X}', \mathbf{t} - \mathbf{t}') \delta(\mathbf{t} - \mathbf{t}') \quad (2)$$



# Matrix

The characteristic polynomial  $\chi(\lambda)$  of the  $3 \times 3$  matrix

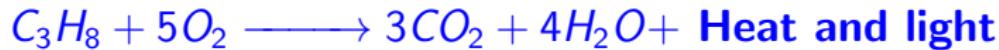
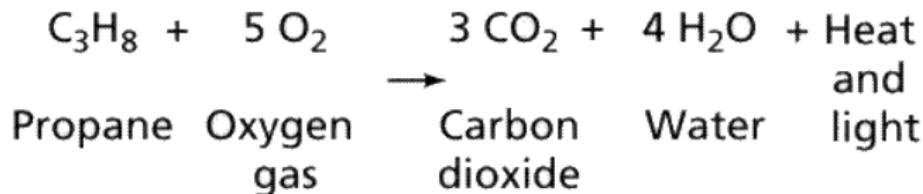
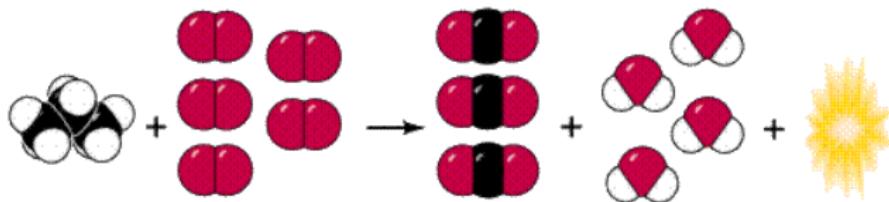
$$\begin{pmatrix} a & b & c \\ d & e & f \\ g & h & i \end{pmatrix}$$

is given by the formula

$$\chi(\lambda) = \begin{vmatrix} \lambda - a & -b & -c \\ -d & \lambda - e & -f \\ -g & -h & \lambda - i \end{vmatrix}.$$



# Chemical Reaction



# Figure/Image

First load the package `graphics`: use package `graphicx` Then include the figure like this:

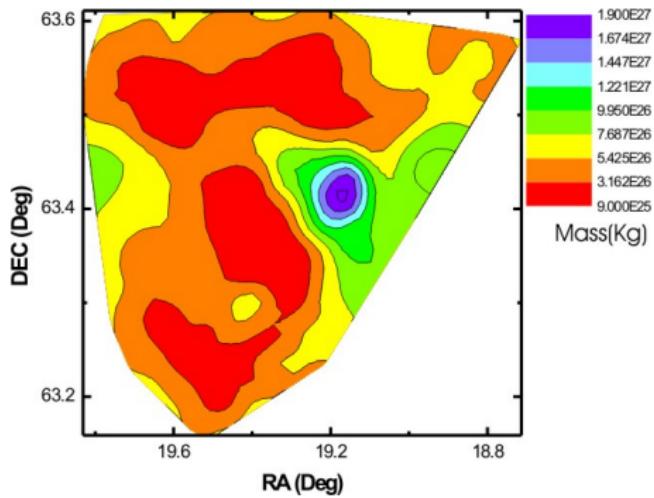


Figure: Dust mass contour map.



# Drawing

```
(0,0) - (4,0) - (4,4) - (0,4) - (0,0);  
(2,2) circle (2cm);
```



# Graph ???

```
[thick,-<] (0,0) – (4.5,0) node[anchor=north west] x axis; [thick,-<] (0,0) –  
(0,4.5) node[anchor=south east] y axis; ;  
{code goes here} in 0,1,2,3,4  
(cm,1pt) – (cm,-1pt) node[anchor=north] ; in 0,1,2,3,4 (1pt,cm) –  
(-1pt,cm) node[anchor=east] ;
```

10

---

<sup>10</sup><https://www.overleaf.com/learn>(April, 2020).



# Circuit Diagrams

(4,2) to[closing switch, o-o] (6,2) (0,4) to[european current source, o-o]  
(2,4) (4,4) to[european voltage source, o-o] (6,4) (0,6) to[empty diode,  
o-o] (2,6) (4,6) to[full led, o-o] (6,6) (0,8) to[generic, o-o] (2,8) (4,8)  
to[sinusoidal voltage source, o-o] (6,8);



# Circuit

```
(0,0) to[battery] (0,4) to[ammeter] (4,4) – (4,0) to[lamp] (0,0) (0.5,0) –  
 (0.5,-2) to[voltmeter] (3.5,-2) – (3.5,0) ;
```



# Grant Chart and Detailed Budget

**Table:** The expected budget for the proposed research program has been estimated as follows:

S.N.	Particulars	Estimated Budget (Rs.)
1.	Reference Books /Journals/Documents and Stationary	45,000
2.	Library fee	50000
3.	Scientific tools, genuine software	100,000



# Font Size

size	standard classes (except <i>slides</i> ), beamer			AMS classes, <i>memoir</i>			<i>slides</i>
	[10pt]	[11pt]	[12pt]	[10pt]	[11pt]	[12pt]	
\tiny	5	6	6	6	7	8	13.82
\scriptsize	7	8	8	7	8	9	16.59
\footnotesize	8	9	10	8	9	10	16.59
\small	9	10	10.95	9	10	10.95	16.59
\normalsize	10	10.95	12	10	10.95	12	19.907
\large	12	12	14.4	10.95	12	14.4	23.89
\Large	14.4	14.4	17.28	12	14.4	17.28	28.66
\LARGE	17.28	17.28	20.74	14.4	17.28	20.74	34.4
\huge	20.74	20.74	24.88	17.28	20.74	24.88	41.28
\Huge	24.88	24.88	24.88	20.74	24.88	24.88	41.28



# Research Misconduct

## 1. Falsification: मिथ्या

Falsification is the changing or omission of research results (data) to support claims, hypotheses, other data, etc. Falsification can include the manipulation of research instrumentation, materials, or processes. Manipulation of images or representations in a manner that distorts the data or “reads too much between the lines” can also be considered falsification.

## 2. Fabrication : बनावटी काम

Fabrication is the construction and/or addition of data, observations, or characterizations that never occurred in the gathering of data or running of experiments. Fabrication can occur when “filling out” the rest of experiment runs, for example. Claims about results need to be made on complete data sets (as is normally assumed), where claims made based on incomplete or assumed results is a form of fabrication.

## 3. Plagiarism: साहित्यिक चोरी /

Plagiarism is, perhaps, the most common form of research misconduct. Researchers must be aware to cite all sources and take careful notes. Using or representing the work of others as your own work constitutes plagiarism, even if committed unintentionally. When reviewing privileged information, such as when reviewing grants or journal article manuscripts for peer review, researchers must recognize that what they are reading cannot be used for their own purposes because it cannot be cited until the work is published or publicly available.

<sup>11</sup>Gilbert, F. J., & Denison, A. R. (2003). Research Misconduct. Clinical Radiology, 58(7), 499-504. doi:10.1016/s0009-9260(03)00176-4



# References & Citation

**14.1: Text Citation:** References in text, should be in the form "Smith, Doe, and Jones [2]" or "...recent experiments [5,6]". The names of all authors of cited papers should normally be given in the references except when the number of authors is very large (say, more than 10).

14.2: The reference style should be as follows:

[cited number] Authors (first name in abbreviation & full family name), Full title of the article (italic), Journal name (standard abbreviated form), volume number (boldface), Issue Number (if needed), page number, and year (in bracket)

[cited number] Authors (first name in abbreviation & full family name), book title (in italic), editor(s) (if required), publisher, year of publication (in bracket)

[cited number] Authors (first name in abbreviation & family name), title of the research work (Ph.D. or M.Sc. or technical/scientific report – in italic), publisher (University/institute or any Research Agency), and year of publication (in bracket)

## Examples:

- [1] C. Oostenbrink, T. A. Soares, N. F. Van der Vegt, and W. F. Van Gunsteren, *Validation of the 53a6 gromos force field*, Eur. Biophys. J., **34**, 4, 273-284, (2005).  
DOI: 10.1007/s00249-004-0448-6
- [2] H. J. C. Berendsen, J. R. Grigera, and T. P. Straatsma, *The missing term in effective pair potentials*, J. Phys. Chem., **91**, 6269-6271 (1987).
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- [7] S. Paudel, *A New Far Infrared Nebula at -60° Latitude*, M.Sc. (Physics) Dissertation, Central Department of Physics, Tribhuvan University, Nepal (2013).

Students are encouraged to add DOI if available. DOI should be added in the next line. For example

- [1] C. Oostenbrink, T. A. Soares, N. F. Van der Vegt, and W. F. Van Gunsteren, *Validation of the 53a6 gromos force field*, Eur. Biophys. J., **34**, 4, 273-284, (2005).  
DOI: 10.1007/s00249-004-0448-6

15. In order to **reproduce** figures, tables, etc., from another journal, authors must show that they have complied with the requirements of the publisher of the other journal, possibly including written agreement of both publisher and author of the originally published work.

This format for should be strictly followed by the M.Sc. (Physics) students for their Term Paper in all campuses, colleges affiliated with Tribhuvan University.

Central Department Research Committee  
Central Department of Physics  
Tribhuvan University, Kirtipur

May, 2019



# References & Citation

Google Scholar search results for "Dust Structure Around Asymptotic Giant Branch Stars".

Refined search terms: Dust Structure Around Asymptotic Giant Branch Stars

Sort by relevance

Sort by date

Include patents

Include citations

Dust Structure Around Asymptotic Giant Branch Stars

MLA Upadhyay, Devendra Raj, et al. "Dust Structure Around Asymptotic Giant Branch Stars." *Proceedings of the International Astronomical Union* 14.5343 (2018): 525-526.

APA Upadhyay, D. R., Khanal, L., Hamal, P., & Aryal, B. (2018). Dust Structure Around Asymptotic Giant Branch Stars. *Proceedings of the International Astronomical Union*, 14(5343), 525-526.

Chicago Upadhyay, Devendra Raj, Lochan Khanal, Priyanka Hamal, and Binil Aryal. "Dust Structure Around Asymptotic Giant Branch Stars." *Proceedings of the International Astronomical Union* 14, no. 5343 (2018): 525-526.

Harvard Upadhyay, D.R., Khanal, L., Hamal, P. and Aryal, B., 2018. Dust Structure Around Asymptotic Giant Branch Stars. *Proceedings of the International Astronomical Union*, 14(5343), pp.525-526.

Vancouver Upadhyay DR, Khanal L, Hamal P, Aryal B. Dust Structure Around Asymptotic Giant Branch Stars. *Proceedings of the International Astronomical Union*. 2018 Aug;14(5343):525-6.

BibTeX EndNote RefMan RefWorks

MLA Jha, A. K., and B. Aryal. "Dust color temperature distribution of two FIR cavities at IRIS and AKARI maps." *Journal of Astrophysics and Astronomy* 39.2 (2018): 24.

APA Jha, A. K., & Aryal, B. (2018). Dust color temperature distribution of two FIR cavities at IRIS and AKARI maps. *Journal of Astrophysics and Astronomy*, 39(2), 24.

Chicago Jha, A. K., and B. Aryal. "Dust color temperature distribution of two FIR cavities at IRIS and AKARI maps." *Journal of Astrophysics and Astronomy* 39, no. 2 (2018): 24.

Harvard Jha, A.K., and Aryal, B. 2018. Dust color temperature distribution of two FIR cavities at IRIS and AKARI maps. *Journal of Astrophysics and Astronomy*, 39(2), p.24.

Vancouver Jha AK, Aryal B. Dust color temperature distribution of two FIR cavities at IRIS and AKARI maps. *Journal of Astrophysics and Astronomy*. 2018 Apr;139(2):24.

BbTeX EndNote RefMan RefWorks

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#article{Jha2018dust,
  title={Dust color temperature distribution of two FIR cavities at IRIS and akari maps},
  author={Jha, Akash, and Aryal, B.},
  journal={Journal of Astrophysics and Astronomy},
  volume={39},
  number={2},
  pages={24},
  year={2018},
  publisher={Springer}
}
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# References & Citation

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    \bibitem{B1}{\bf Zijlstra, A. A. and Weinberger, R.} (2002). A WALL OF DUST AROUND A PROTO-MIRA?, The Astrophysical Journal, \textbf{572}, 1006-1011.  
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    \bibitem{14}{\bf Jackson, J. D.}(1962). Classical electrodynamics,
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## References

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\bitem{R}\url{https://www.jpl.nasa.gov/spaceimages/images/largesize/PIA17444 hires.jpg} (2018).

\end{thebibliography}

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# Home Work (Proposal Writing)

- Everybody talking about economy crisis these days in Nepal. Develop a research proposal requesting for research grant to the Research Division of Tribhuvan University on one of the topics related to the economy growth of country like Nepal.
- Modern era is the science and technology era Need of supercomputer is essential in your physics department. Develop a research proposal requesting for grant to the Research Division of University Grant Commission.
- Develop a proposal with essential components for M.Sc. Thesis on any relevant topic related to Interstellar Medium to B.P. Koirala Memorial Planetarium, Science Museum development Board,



# Home Work (Proposal Writing)

- Develop a proposal with essential components for M.Sc. Thesis on any relevant topic related to Galaxy Evolution to Nepal Academy of Science & Technology Khumaltar, Lalitpur, Nepal.
- Develop a proposal with essential components any relevant topic related to Need of Entrepreneurship for Physicists to Research Division of Institute of Science and Technology, Tribhuvan University, Nepal.



# Thank You Very Much!!!

[Take Care, Stay Safe & Stay busy in Research]

