Intro to editing with LaTeX

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Before We Start

- It is better if you are familiar with LaTeX grammar.
- But I think anyone can be a good LaTeX editor
  with a little asking (to Volker or Jan) and googling.

- Be aware that
  - Pickiness of Editing is up to the Editor-in-chief of the conference.
  - Every rule is in the Template file (JACoW_LaTeX_A4.tex).

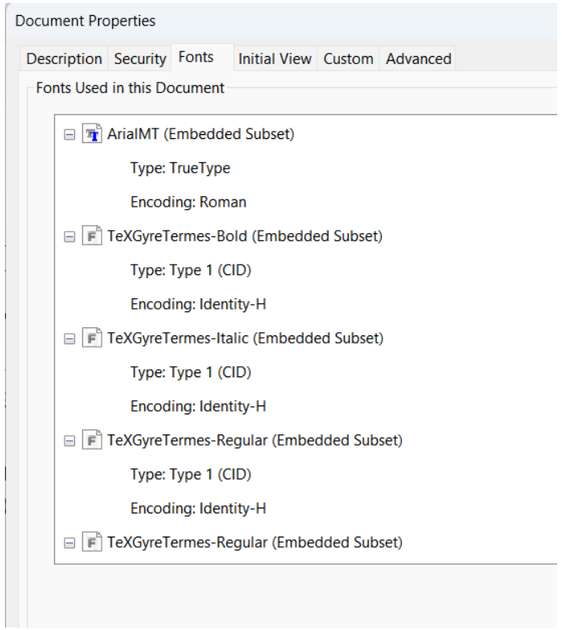
- Bible of Basic LaTeX Editing
  https://www.jacow.org/Editors/BasicLaTeX
- I referred Jan's Tutorial
  https://www.jacow.org/uploads/Editors/latex_basic_tutorial29Nov2017.pdf

Set-up

- Initial Set-up
  - MiKTeX package download
  - Test compiling JACoW_LaTeX_A4.tex using F5 (TeXstudio, Build and View)

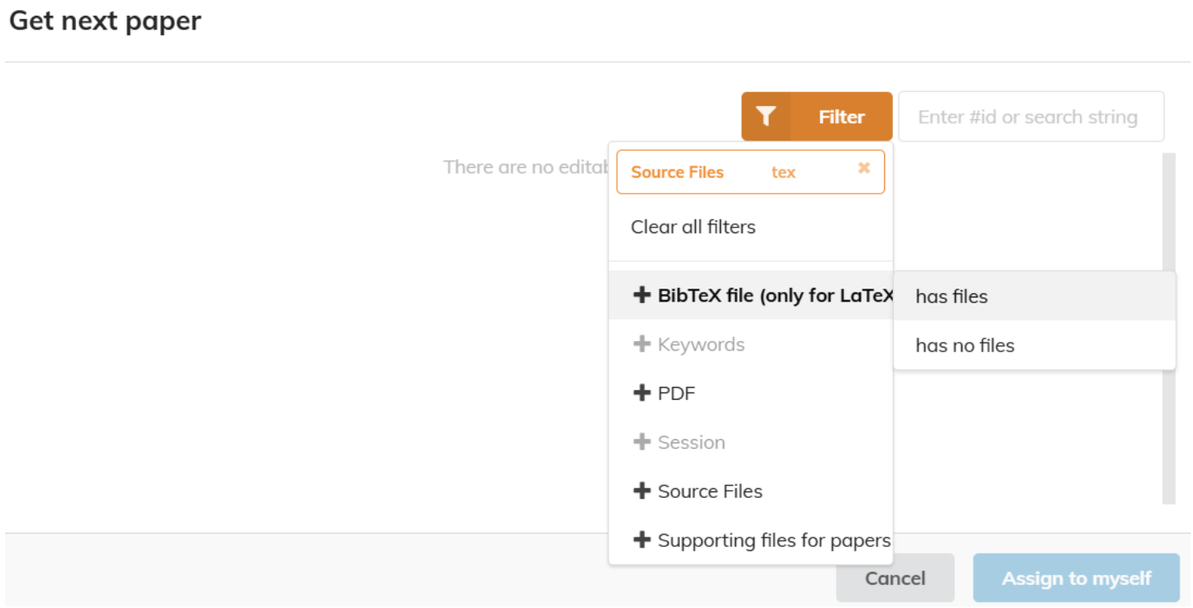
- Desktop Set-up
  - Conference Indico page
  - TeXstudio (or another LaTeX editor)
  - JACoW Reference search tool
  - doi.org
  - Google
  - Notebook(or Word, Excel, real paper, etc.) for comment

Editing Process



- Assigning paper
- Editing
  - Check it is Red-dot or not.
  - Edit source file.
  - Compile (print) and check PDF
    (boundary, font embedding (Ctrl+D) -> preflight (Ctrl+Shift+X).
- Uploading Yellow-dot paper and comment (barely Green-dot)
- Final QA

Assigning Paper



- There are two types of LaTeX paper.
  - Only .tex file
  - .tex + .bib file
- Only .tex file use /bibitem which is more intuitive.
- Zhichu Chen is developing very nice tool for handling .bib file.
- But until now, if you are not familiar with .bib file, choose paper with only .tex file.

- If you have an interest/expertise to a certain field, choose paper in that field.

- Download files and put them in the same folder.

Decide RED or not

- Red-dot paper means the Author should fix the problem.
  - Too many pages.
  - Figure, Table, Reference is not cited.
  - Reference citation in an abstract.
  - Editing will takes too much time.

- If you can easily fix those error, I recommend you to correct it and do not put a Red-dot.

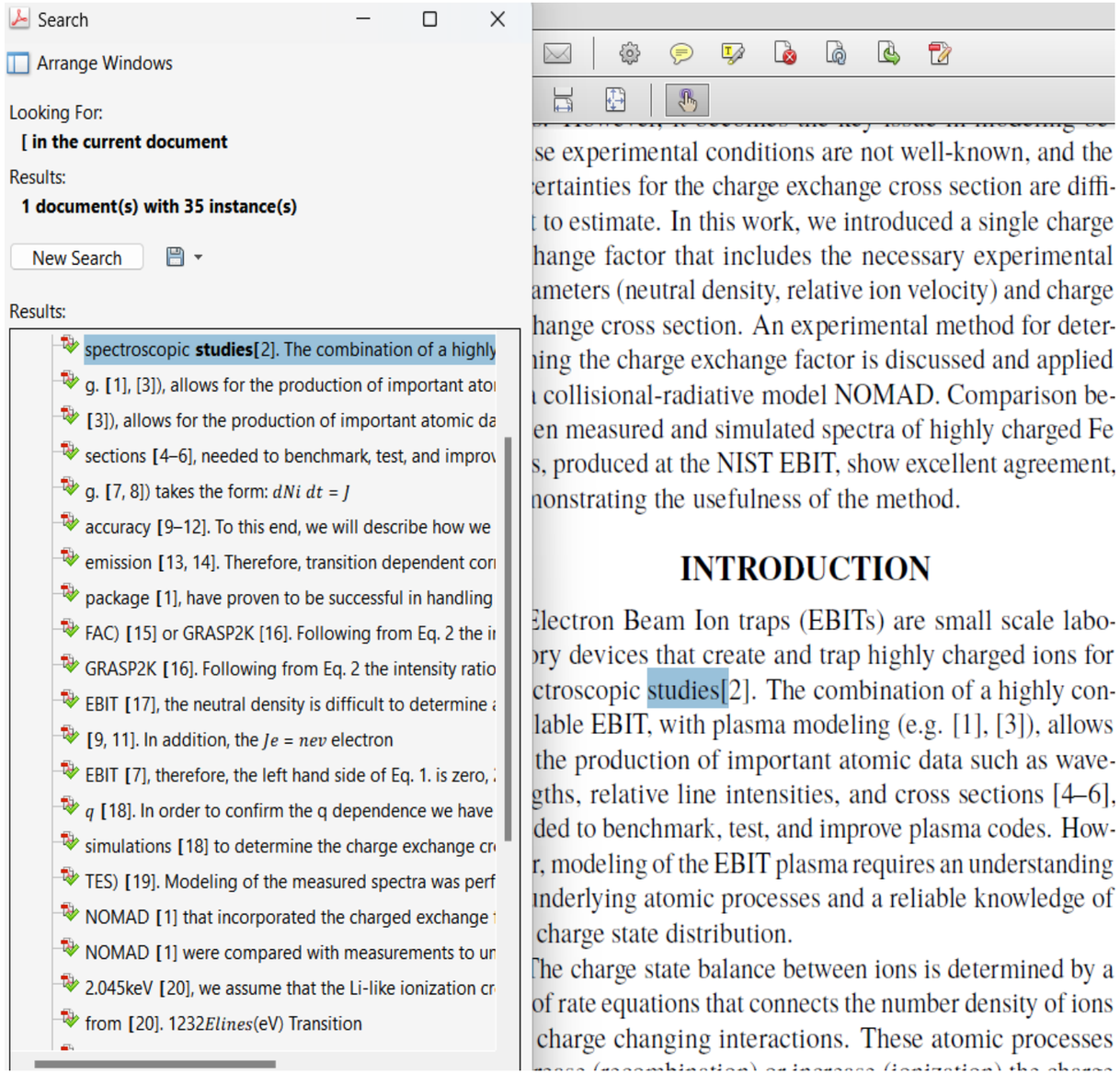
Decide RED or not

- Open PDF file and
  - Check the page number.
  - Use Advanced search (Ctrl+Shift+F).
    - Fig
    - Tab
    - [
  - Check

All Figure, Table, Reference is cited

+ Figure, Table, Ref. is cited in sequence

+ Figure, Table, Ref. citation format.



Edit source file

- Check proper compiler(PDFLaTeX, LuaLaTeX, …) is applied.
  I prefer LuaLaTeX.

```
% !TeX spellcheck = en_US
% !TeX program = lualatex
%
```

- Check jacow.cls is applied.

```
%
\documentclass[a4paper]{jacow}
%
```

- Scan from the Title to the References (using PDF or TeXstudio).
  In a .tex file From `\begin{document}` to `\end{document}`

- Use search and replace tool of TeXstudio. But replace all is not recommended.

Easier Things with LaTeX

- Spellcheck using % !TeX spellcheck = en_US

- LaTeX editors do not care about

Font, Font size, Margin, Spacing, Alignment. (If the latest jacow.cls is applied.)

Harder Things with LaTeX

```
$N_p \simeq 3\times 10^{11}$.
```

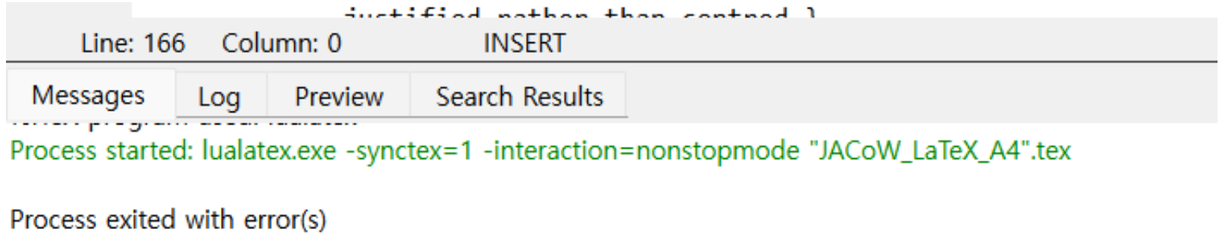
- LaTeX grammar
  - Table, Equation, Math mode. (See Jan's tutorial.)
    https://www.jacow.org/uploads/Editors/latex_basic_tutorial29Nov2017.pdf

- \usepackage

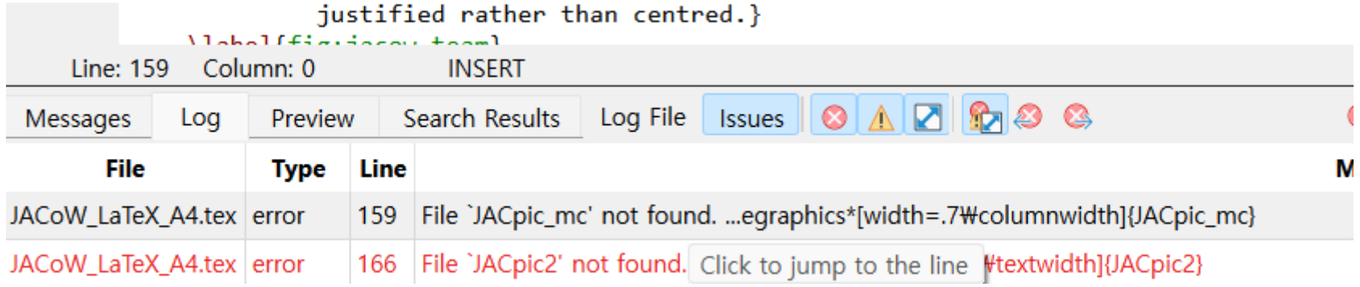
- Compile is time consuming.
  - Correct -> View -> Correct -> View
  - Do the multiple correction and compile to save time.

How to Handle Compiling Errors

- You will see this many times.



- Read the log and fix it.



Frequently edited error with LaTeX

- NoCaseChange in Title, section headings
- Subsection headings to be title case
- Author list, Affiliations, Footnotes
- Number-unit line breaking
- Number-unit spacing
- Indentation
- Italic units
- Symbols
- Citations of Table/Figure/Equation
- Table caption to be title case
- Missing period in Figure caption
- Hyperlink
- References

Frequently edited error with LaTeX

- Title, section headings
  - NoCaseChange

```
FCC-ee \NoCaseChange{FCC-ee}
```

FCC-EE FCC-ee

  - Better with a line break

TEST CASE: FEW-ELECTRON FE SPECTRA

TEST CASE:
FEW-ELECTRON FE SPECTRA

- Subsection headings to be title case
  - Search \subsec and correct manually.

Frequently edited error with LaTeX

- Author list, Affiliations, Footnotes
  - Remove zip code
  - Put a comma before the line break when the author list is more than two lines.

- Number-unit, citation separated in two lines
  - Use unbreakable space (~ or \,)

- Number-unit spacing
  - Use \qty{1}{\micro m}

Frequently edited error with LaTeX

- Indentation

```
and improve plasma codes. However, modeling of the EBIT plasma requires
an understanding of underlying atomic processes and a reliable knowledge
of the charge state distribution. \\
The charge state balance between ions is determined by a set of rate
equations that connects the number density of ions via charge changing
interactions. These atomic processes decrease (recombination) or
increase (ionization) the charge state of the ions through elementary
```

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The charge state balance between ions is determined by a set of rate equations that connects the number density of ions

Frequently edited error with LaTeX

- Indentation
  - \bibitem only

```
%\begin{thebibliography}{99}   % Use for  10-99  references
\begin{thebibliography}{9} % Use for 1-9 references

\bibitem{jacow-help}
    JACoW,
    \url{http://www.jacow.org}

\bibitem{IEEE}
    \textit{IEEE Editorial Style Manual},
    IEEE Periodicals, Piscataway,
    NJ, USA, Oct. 2014, pp. 34--52.

\bibitem{journal-abbreviations}
\url{https://woodward.library.ubc.ca/researchhelp/journal-abl
ns/}

\end{thebibliography}
```

Frequently edited error with LaTeX

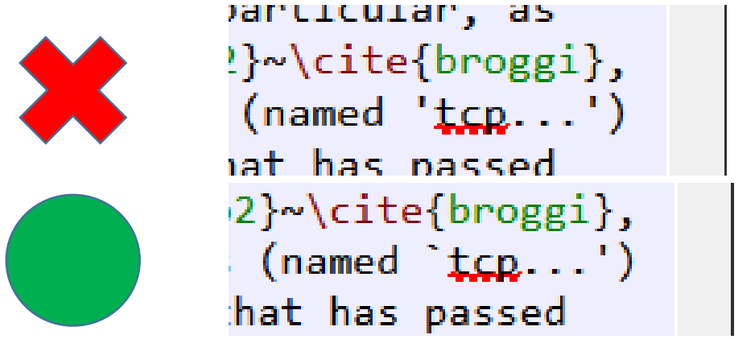
- Italic units
  - e.g. $(E_b = 12.00keV)$
  - Most frequent error : $30\ \mu\mathrm{m}$
    - Correct using \SI{}{}, or \upmu, μ.
  - Units in a math mode : in the advanced course…
- Symbols
  - In the advanced course…

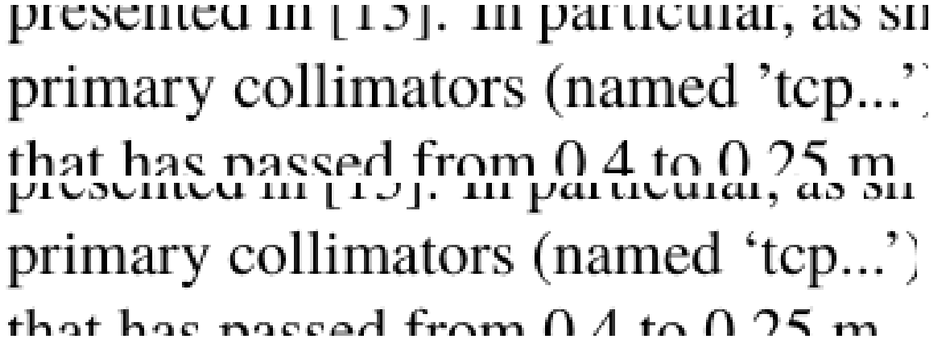
Frequently edited error with LaTeX

- Citations of Table/Figure/Equation
  - Tab. 1, Eq. 1, Fig 3 and 4, and many other variation of error.
  - If those are consistent through the paper, let them be. (I don't prefer.)
  - In text, "** is described in Ref. [23]." is better than "~~ is described in [23]."
- Table caption to be title case
  - No need when it is too long or several sentence.
- Missing period in Figure caption
- Hyperlink
  - Remove all (delete \usepackage{hyperref})

Frequently edited error with LaTeX

- Quotation marks





  - For a double quote, use `` or \textquotedblleft{

- References
  - In the reference course…

Not Frequently edited error with LaTeX (Advanced)

- Font size
- Font embedding
- Table format
- Spacing

exchange factor based on Eq. 8 by comparing theoretically and experimentally measured line intensity ratios. In our

Table 1: Li-like energies from [20].

E_{lines}(eV)	Transition	Ref.
1085.07440	$1s^2 2p\ ^2P_{\frac{3}{2}} - 1s^2 3s\ ^2S_{\frac{1}{2}}$	[21] [22]
1101.04030	$1s^2 2p\ ^2P_{\frac{1}{2}} - 1s^2 3s\ ^2S_{\frac{1}{2}}$	[21] [22]
1109.93510	$1s^2 2p\ ^2P_{\frac{3}{2}} - 1s^2 3d\ ^2D_{\frac{5}{2}}$	[21] [23]
1162.69910	$1s^2 2s\ ^2S_{\frac{1}{2}} - 1s^2 3p\ ^2P_{\frac{1}{2}}$	[21] [23] [24]
1167.59900	$1s^2 2s\ ^2S_{\frac{1}{2}} - 1s^2 3p\ ^2P_{\frac{3}{2}}$	[21] [23] [24]

model, we varied the charge exchange factor $\frac{n_0 v_r}{n_e v}$ as a free parameter and calculated line intensity ratio of Li-like lines

LaTeX Tips

- Chemicals

\usepackage[version=3]{mhchem}
\ce{SnCl_2}

- Boldface for symbol

\symbf
or
\mathbf
Boldface + Italic for symbol
\mathbfit
Boldface for text
\textbf
Upright for symbol
\symup

- Frequently used symbols

°C
µ

- Scientific Number in text

\num{2.7e10}

- Prevent hypenation of specific word

\hyphenation{word}

- Upright \ohm of SI in mathmode

\DeclareMathSymbol{\varOmega}{\mathalpha}{operators}{"0A}
\providecommand*{\upOmega}{\varOmega}
or just use
Ω

LaTeX Tips

- Minus spacing

In text mode: \kern-1em equals "minus quad"
In math mode: \mkern-18mu equals "minus quad"

- Font size control

\tiny F-tiny.png
\scriptsize F-scriptsize.png
\footnotesize F-footnotesize.png
\small F-small.png
\normalsize F-normalsize.png
\large F-large.png
\Large F-large2.png
\LARGE F-large3.png
\huge F-huge.png
\Huge F-huge2.png

- Vertical Space control

\vspace*{-1\baselineskip}

- Ling breaking in URL

\usepackage{breakurl}
\makeatletter
\g@addto@macro\UrlSpecials{\do\!{\newline}}
and put ! where to put newline

Summary

- Always be aware that
  - Pickiness of Editing is up to the Editor-in-chief of the conference.
  - Every rule is in the Template file.

Thank you for your attention