

AST1501 - Introduction to Research

Jo Bovy

Intro to academic writing

Overview

- Different kinds of academic writing
- Structure of a scientific paper
- Make content engaging
- Tools:
 - LaTeX
 - Overleaf

Different types of academic writing

Many different types of academic writing

- Papers
- Proposals
- Emails
- Conference abstracts
- Internal reports in collaborations, wiki pages, ...
- Documentation (code, data)
- ...



Structure of a scientific paper

Purpose of a paper

- Purpose of a paper is to report on a novel scientific investigation of a topic of interest
- Introduction: motivate and contextualize the problem:
 - discuss broader area and how the specific question you are investigating fits into this,
 - discuss prior and related work,
 - give overview of the paper structure
- Data/methods sections: Need to spell out the data and methods used in sufficient detail to allow for exact replication —> completeness trumps brevity
- Results section: discuss results and immediate implications
- Discussion section: broader implications, compare to previous work
- Conclusion: recap most important results, look a bit to the future
- Can make sense to split these basic sections up further

The abstract

- For many people, the only part of your paper they will ever read!
- Generally ~250 words (~12 to 15 sentences)
- Mini-version of the paper: introduce/motivate (1-2 sentences), give method (2-3 sentences), results (3-4 sentences), implications (1-2 sentences)
- A&A uses an explicit template: (Context), Aims, Methods, Results, (Conclusions)
- Generally best not to cite anything unless absolutely necessary
- Mention results (including numbers) that you *really* want people to take away from your paper

Writing style

- Write in a largely impersonal, yet engaging manner
- Avoid passive voice, mainly use present tense:
 - ~~In this paper, the relation between the mass and the velocity dispersion of a cluster is derived~~ —> In this paper, we derive the relation between the mass and the velocity dispersion of a cluster
 - ~~We cross-matched data from Gaia DR3 and Pan-Starrs DR2 and used it to create a deep Color-magnitude diagram~~ —> We cross-match data from Gaia DR3 and Pan-Starrs DR2 and use it to create a deep Color-magnitude diagram
- Astro references are AUTHOR (YEAR) [+variations], but cite impersonally
 - Generally prefer (AUTHOR YEAR) to AUTHOR (YEAR): ~~Aardvark (2019) and Armadillo et al. (2020) found that cluster masses can be derived from observed velocity dispersions~~ —> Previous work has shown that cluster masses can be derived from observed velocity dispersions (Aardvark 2019; Armadillo et al. 2020)
 - Always remember that you are citing a paper, not a person: ~~Aardvark was the first to show that cluster masses can be derived from observed velocity dispersions. She did this by starting from the general ...~~ —> Aardvark (2019) was the first to show that cluster masses can be derived from observed velocity dispersions. They did this by starting from the general ...

Figures and figure captions

- Figures are often the most viewed parts of papers (e.g., journal clubs)
- So make them as self-explanatory as possible!
- Label things directly on the figure rather than explaining in the caption, use lines/arrows rather than legends when practical
- Caption should explain what the figure shows and everything that isn't immediately obvious about a figure. For results/implications figures, they should also mention the take-away message ("This figure clearly shows the trend between X and Y that is present in our data").
- Try to be as brief as possible! But again completeness trumps brevity.

Figures and figure captions

- Figures a
- So make
- Label thir lines/arro
- Caption s immediat should al trend bet
- Try to be

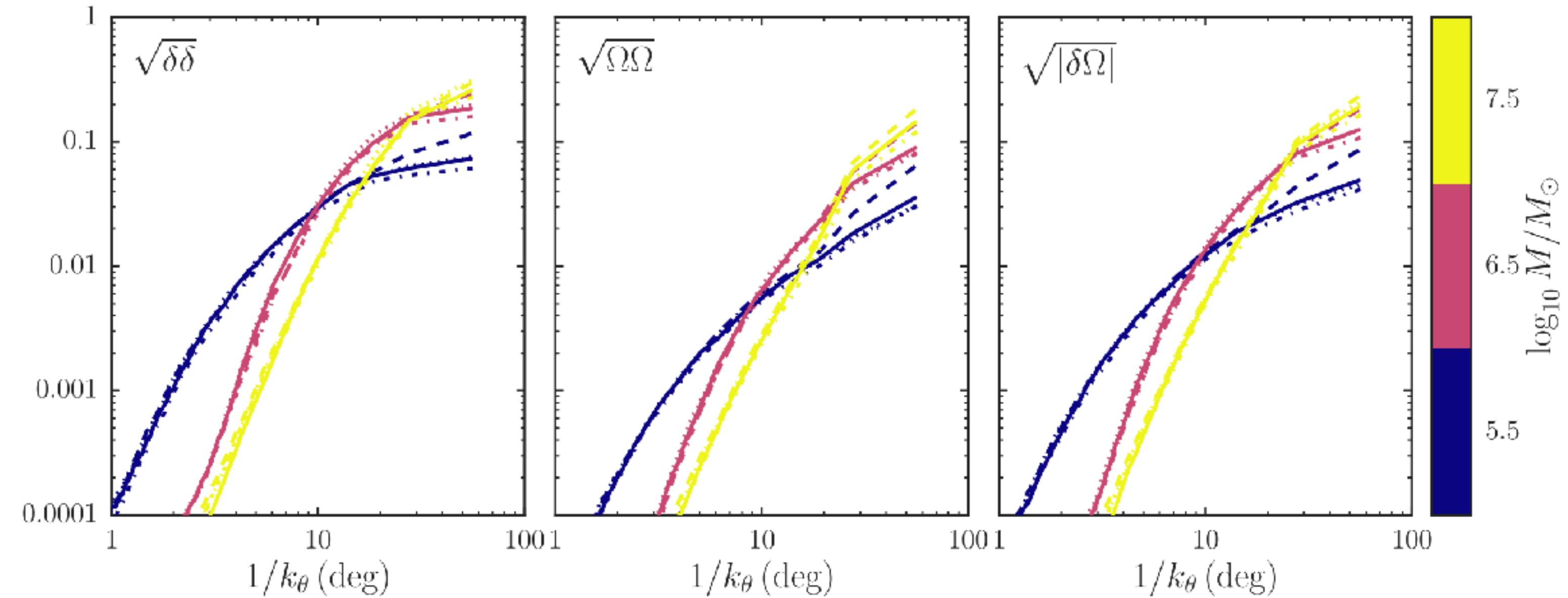


Figure 12. Power spectra of the fluctuations in the density and the mean track $\langle \Delta\Omega_{||} \rangle \langle \Delta\theta_{||} \rangle$ relative to those in the unperturbed stream for impacts of different masses. Each curve has impacts of a single value for the mass with the rate set by the surrounding mass decade (e.g. that of 10^7 – $10^8 M_\odot$ for $10^{7.5} M_\odot$). The left-hand and middle panels display the square root of the power spectra of the density and $\langle \Delta\Omega_{||} \rangle \langle \Delta\theta_{||} \rangle$ fluctuations, while the right-hand panel shows the square root of the magnitude of the cross power spectrum between the density and $\langle \Delta\Omega_{||} \rangle \langle \Delta\theta_{||} \rangle$. The x-axis is the inverse of the wavenumber, such that small scales are on the left-hand side. All curves are the median of at least 1 000 different simulations. The solid lines are computed using the fiducial simulation setup; with other linestyles, we also show the result from increasing the time sampling, the factor X that sets the maximum impact parameter and the length along the stream at which impacts are considered (see text for details). While all the different mass ranges contribute most of their power on the largest scales, the power on smaller scales is cut off in a mass-dependent manner. The power on a particular scale is dominated by the contribution of a single mass range. In particular, the power on a few degree scales is dominated by the effect of $\approx 10^5$ – $10^6 M_\odot$ subhaloes. Both the density and mean track display fluctuations of a similar magnitude and a similar dependence on scale, although the density fluctuations are typically a factor of a few larger. Fluctuations in the density and the track are strongly correlated.

os)

ion, use

sn't
, they
ows the

ity.

Other tips

- Everything in the reference list should be cited in the text
- Everything cited in the text should be in the reference list (incl. references in figures)
- Use footnotes sparingly and never for anything that a reader should read
- Avoid too much jargon and too many abbreviations, but do abbreviate long terms that you would otherwise use a lot (e.g., “Giant Molecular Cloud” —> “GMC”)
- Aim to be as consistent as possible in terms and math symbols used —> LaTeX macros to the rescue!

Make content engaging

1. **What is the primary purpose of the study?**

2. **Who were the participants in the study?**

3. **What were the main findings of the study?**

4. **How was the data collected?**

5. **What were the limitations of the study?**

6. **What are the implications of the findings?**

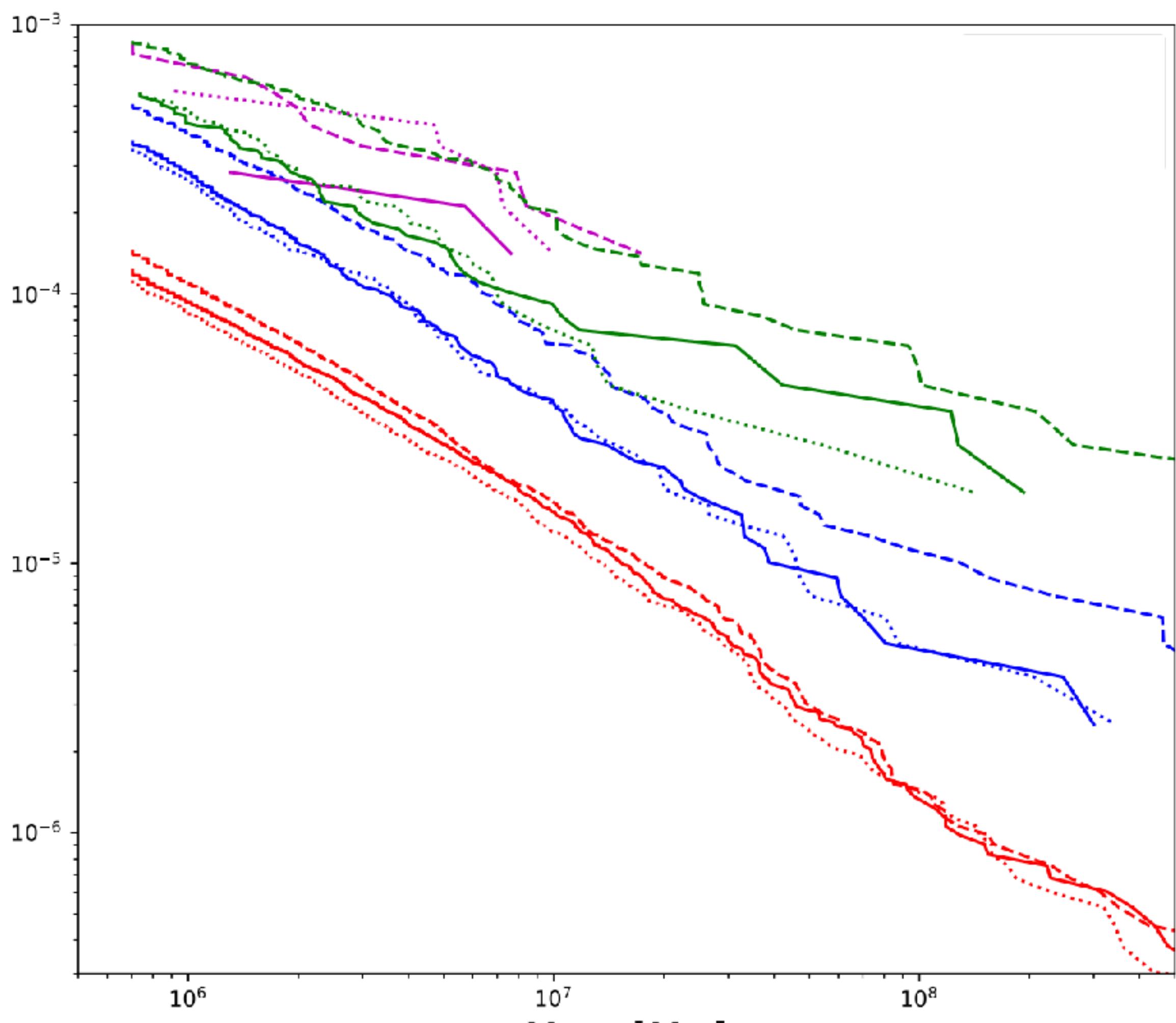
7. **What are the strengths of the study?**

8. **What are the weaknesses of the study?**

9. **What are the conclusions of the study?**

10. **What are the recommendations of the study?**

README



MATTIAS LAZDA

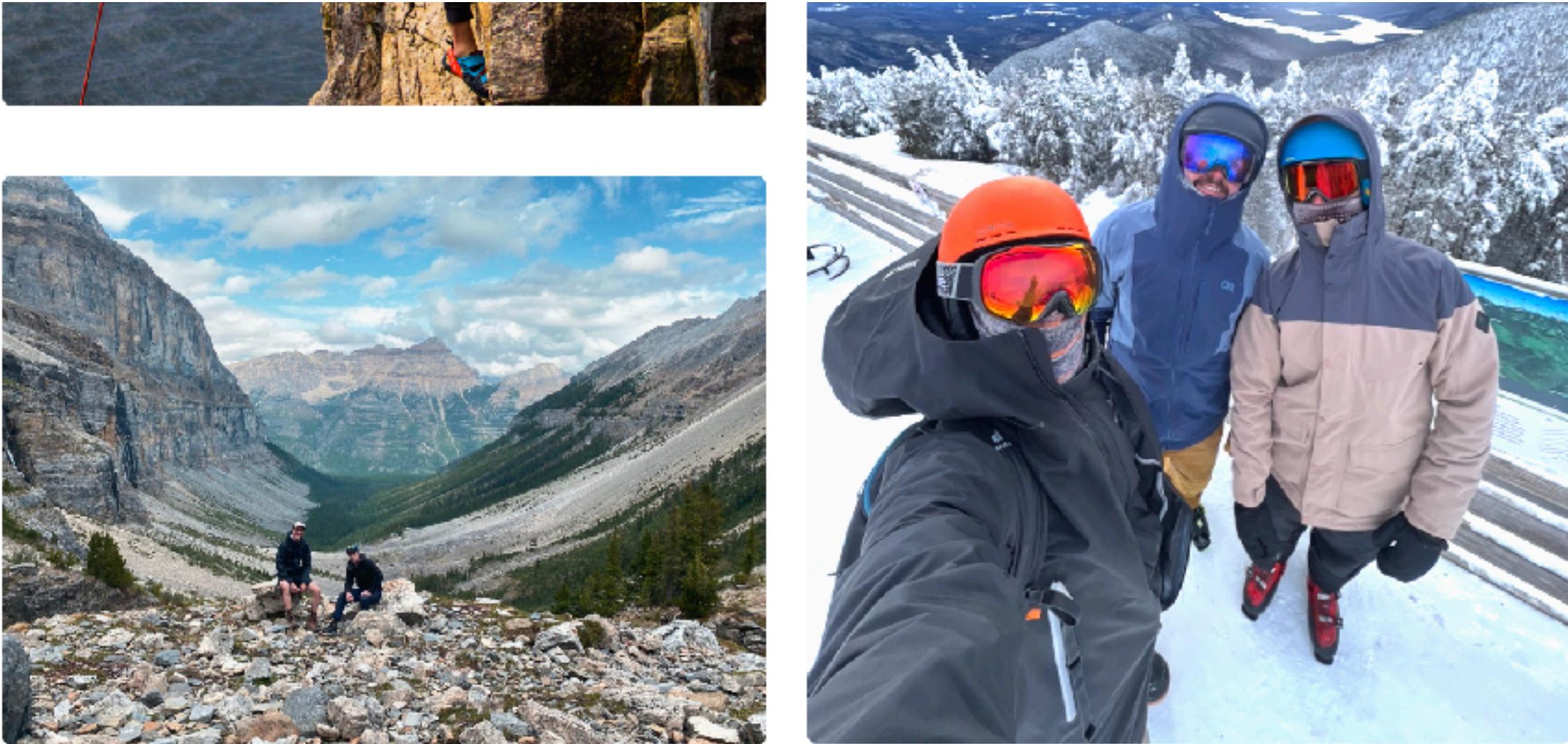
[HOME](#) [MY RESEARCH](#) [PHOTOS](#)



localize FRBs to their host galaxies. I joined CHIME/FRB in 2021 where I have since worked on commissioning two new radio telescopes. My undergraduate thesis lead to the development of the software pipeline that now enables the newly built telescopes to point at any particular point in the sky, a process known as beamforming.

Outside of school, I love to travel! I've included some of my favourite photos from my trips on my photos page.

[MORE PHOTOS](#)

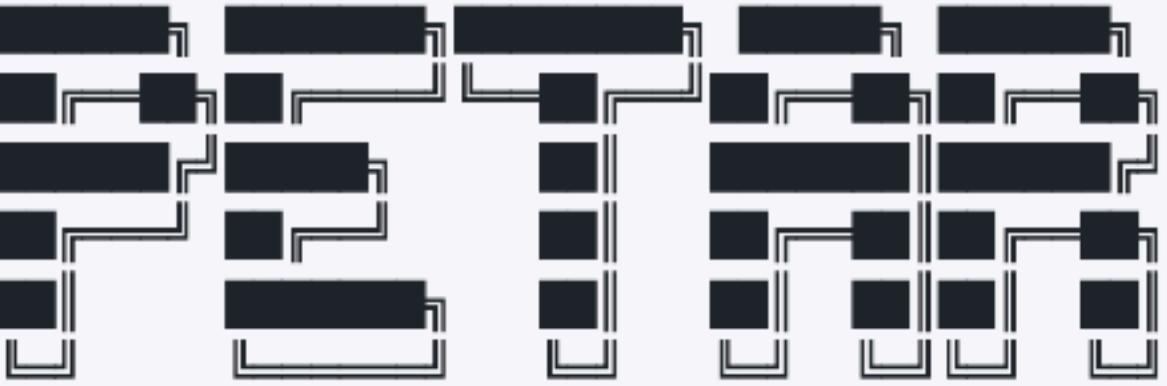


Current Institution: McGill University | Email: mattias.lazda@mail.mcgill.ca



Copyright © 2023 Mattias Lazda

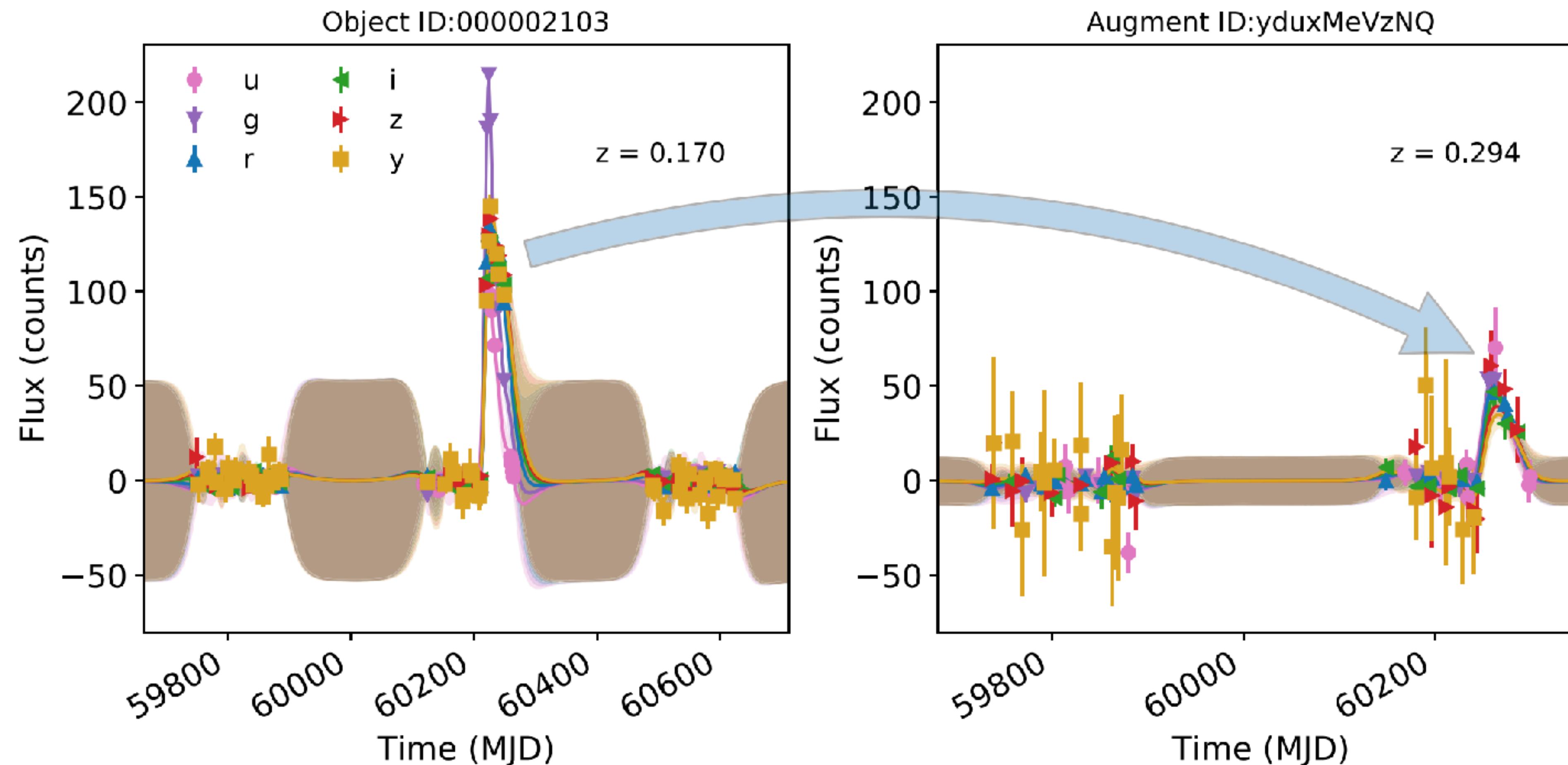
☰ README.md



PeTar is a N-body code designed to model collisional stellar systems, where multiplicity (binaries, triples ...) and close encounters are important for dynamical evolution. It combines three integration methods:

- The Barnes-Hut tree (Barnes & Hut 1986) is used to calculate long-range forces between particles, which are integrated with a second-order symplectic leap-frog integrator.
- The fourth-order Hermite integrator with block time steps (e.g., Aarseth 2003) is applied to integrate the orbits of stars and the centers-of-mass of multiple systems with short-range forces.
- The slow-down algorithmic regularization method (SDAR; Wang, Nitadori & Makino 2020) is used to integrate the multiple systems, such as hyperbolic encounters, binaries and hierarchical few-body systems.

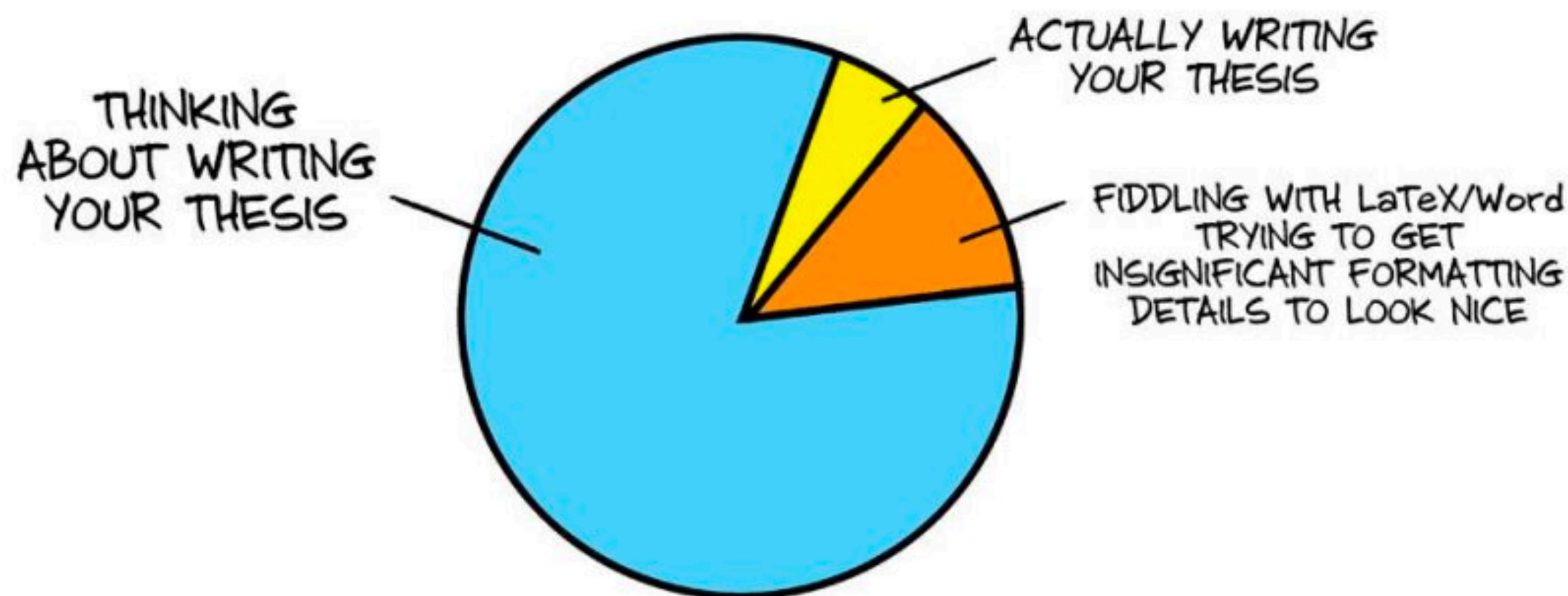
This readme provide a complete and short documentation to describe how to install and use the code. Please carefully read it first before asking questions to developers. More detail of the algorithms are described in Wang et al. (2020, arXiv: <https://arxiv.org/abs/2006.16560>). The detailed documentation for developers is under



Tools

LaTeX

WRITING YOUR THESIS:



LaTeX

- You all indicated that you know LaTeX already, so we won't go through it in detail here
- LaTeX to me has two parts:
 - Full system for producing scientific papers, books, reports, proposals, your dissertation —> write all text in plain text file, compile, get output
 - Math engine used far more broadly (e.g., MathJax on the web [incl. Jupyter notebooks], plot labels in matplotlib, equations in presentations)
- People at UofT generally publish either in AAS journals or MNRAS (probably on its way out...) —> use their LaTeX templates
- Use macros for units, consistency of terms/symbols, comments

```
% Basic setup. Most papers should leave these options alone.  
\documentclass[fleqn,usenatbib]{mnras}  
  
% MNRAS is set in Times font. If you don't have this installed (most LaTeX  
% installations will be fine) or prefer the old Computer Modern fonts,  
comment  
% out the following line  
\usepackage{newtxtext,newtxmath}  
% Depending on your LaTeX fonts installation, you might get better results  
with one of these:  
%\usepackage{mathptmx}  
%\usepackage{txfonts}  
  
% Use vector fonts, so it zooms properly in on-screen viewing software  
% Don't change these lines unless you know what you are doing  
\usepackage[T1]{fontenc}
```

```
++  
45 %%%%%% AUTHORS - PLACE YOUR OWN PACKAGES HERE %%%%%%  
46  
47 % Only include extra packages if you really need them. Common packages are:  
48 \usepackage{graphicx}    % Including figure files  
49 \usepackage{amsmath}     % Advanced maths commands  
50 % \usepackage{amssymb}   % Extra maths symbols  
51 \usepackage{color}  
52 \usepackage{tikz}  
53 \usetikzlibrary{positioning}  
54 %\usepackage{needspace}  
55 % hypertex insanity  
56 \definecolor{linkcolor}{rgb}{0,0,0.25}  
57 \hypersetup{  
58 colorlinks=true,          % false: boxed links; true: colored links  
59 linkcolor=blue,           % color of internal links  
60 citecolor=blue,            % color of links to bibliography  
61 filecolor=blue,             % color of file links  
62 urlcolor=blue,              % color of external links  
63 draft=False,  
64 }
```

```
84 \newcommand{\henry}[1]{\color{red} Henry: #1}
85 \definecolor{darkgreen}{rgb}{0.0, 0.7, 0.0}
86 \newcommand{\jo}[1]{\color{darkgreen} Jo asks/comments: #1}
87 \definecolor{darkblue}{rgb}{0.0, 0., 0.7}
88 \newcommand{\sugfig}[1]{\color{darkblue} Suggested Figure: #1}
89
90
91 \newcommand{\gaia}{\emph{Gaia}}
92 \newcommand{\tess}{\emph{TESS}}
93 \newcommand{\kepler}{\emph{Kepler}}
94 \newcommand{\tmass}{\emph{2MASS}}
95
96 \renewcommand{\vec}[1]{\ensuremath{\mathbf{#1}}}
97 \newcommand{\teff}{\ensuremath{T_{\mathrm{eff}}}}
98 \newcommand{\logg}{\ensuremath{\log g}}
99 \newcommand{\xh}[1]{\ensuremath{[\mathrm{#1/H}]}}
100 \newcommand{\xfe}[1]{\ensuremath{[\mathrm{#1/Fe}]}}
101 \newcommand{\cn}{\ensuremath{[\mathrm{C/N}]}}
102 \newcommand{\alpham}{\ensuremath{[\alpha/\mathrm{M}]}}
103 \newcommand{\dex}{\ensuremath{\mathrm{dex}}}
104 \newcommand{\um}{\ensuremath{\mu \mathrm{m}}}
```

```
137 % Title of the paper, and the short title which is used in the headers.  
138 % Keep the title short and informative.  
139 \title[Towards an astronomical foundation model for stars]{Towards an  
astronomical foundation model for stars with a Transformer-based model}  
140  
141 % The list of authors, and the short list which is used in the headers.  
142 % If you need two or more lines of authors, add an extra line using  
% \newauthor  
143 \author[Leung \& Bovy]{  
144 Henry W. Leung\$^{\{1\}}$\thanks{E-mail: henrysky.leung@utoronto.ca} \&  
145 Jo Bovy\$^{\{1,2\}}$  
146 \newauthor  
147 \\  
148 % List of institutions  
149 \$^{\{1\}}$David A. Dunlap Department of Astronomy and Astrophysics, University  
of Toronto, 50 St. George Street, Toronto, Ontario, M5S 3H4, Canada\\  
150 \$^{\{2\}}$Dunlap Institute for Astronomy and Astrophysics, University of  
Toronto, 50 St. George Street, Toronto, Ontario, M5S 3H4, Canada  
151 }  
152 % These dates will be filled out by the publisher  
153 \date{Accepted XXX. Received YYYY; in original form ZZZ}  
154  
155 % Enter the current year, for the copyright statements etc.  
156 \pubyear{2023}  
157  
158 % Don't change these lines  
159 \begin{document}  
160 \label{firstpage}  
161 \pagerange{\pageref{firstpage}--\pageref{lastpage}}  
162 \maketitle
```

Towards an astronomical foundation model for stars with a Transformer-based model

Henry W. Leung¹★ & Jo Bovy^{1,2}

¹*David A. Dunlap Department of Astronomy and Astrophysics, University of Toronto, 50 St. George Street, Toronto, Ontario, M5S 3H4, Canada*

²*Dunlap Institute for Astronomy and Astrophysics, University of Toronto, 50 St. George Street, Toronto, Ontario, M5S 3H4, Canada*

Accepted XXX. Received YYY; in original form ZZZ

Some useful LaTeX tools

- Detexify: hand-drawn symbol → LaTeX

The image consists of three separate screenshots arranged horizontally. The leftmost screenshot is a vertical Sephora advertisement for 'JUST DROPPED' products, featuring several bottles of skincare and makeup. The middle screenshot is the Detexify website, showing a hand-drawn arrow symbol in a central input field, with a red 'X' indicating an error. The rightmost screenshot is a TD Insurance advertisement featuring a woman looking at a phone, with a list of LaTeX symbols and their scores displayed on the right side.

Detexify

Want a Mac app?

Lucky you. The Mac app is finally stable enough. See how it works on [Vimeo](#). Download the latest version [here](#).

Restriction: In addition to the LaTeX command the unlicensed version will copy a reminder to purchase a license to the clipboard when you select a symbol.

You can purchase a license here:

[Buy Detexify for Mac](#) [Gumroad](#)

Did this help?

The symbol is not in the list? [Show more](#)

Score: 0.08443100140110471
\usepackage{ amssymb }
\gtrsim
mathmode

Score: 0.12348029554028109
\usepackage{ amssymb }
\gtrapprox
mathmode

Score: 0.13753207485740243
\usepackage{ amssymb }
\geq
mathmode

Score: 0.14061526630628612
\usepackage{ amssymb }
\succsim
mathmode

Score: 0.14814596849864098
\usepackage{ amssymb }
\geqq
mathmode

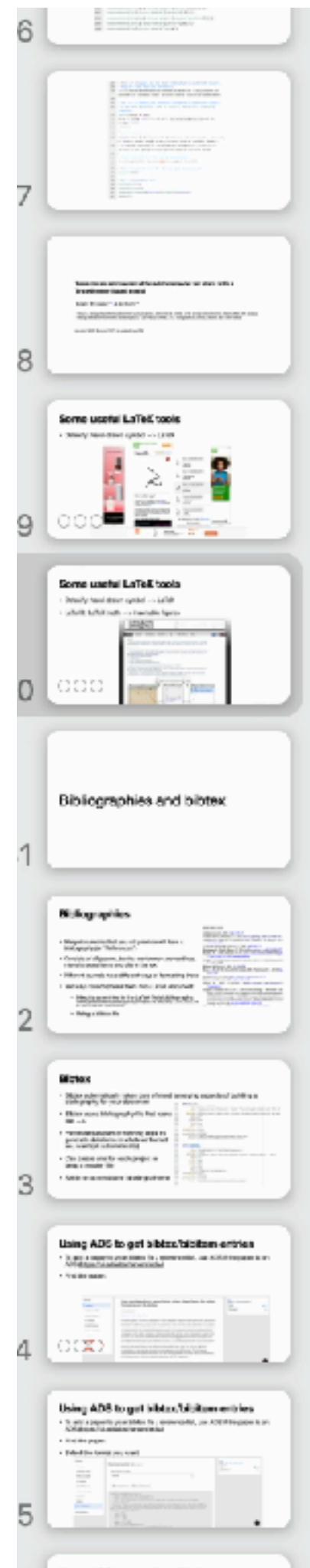
Hostina Detexify costs money and if it helps you may

Gorilla Ladders
3-Step Steel Lightweight Step Stool
Ladder Type II Duty Rating
★★★★★ (54)
\$57.68 [Shop Now](#)

Some useful LaTeX tools

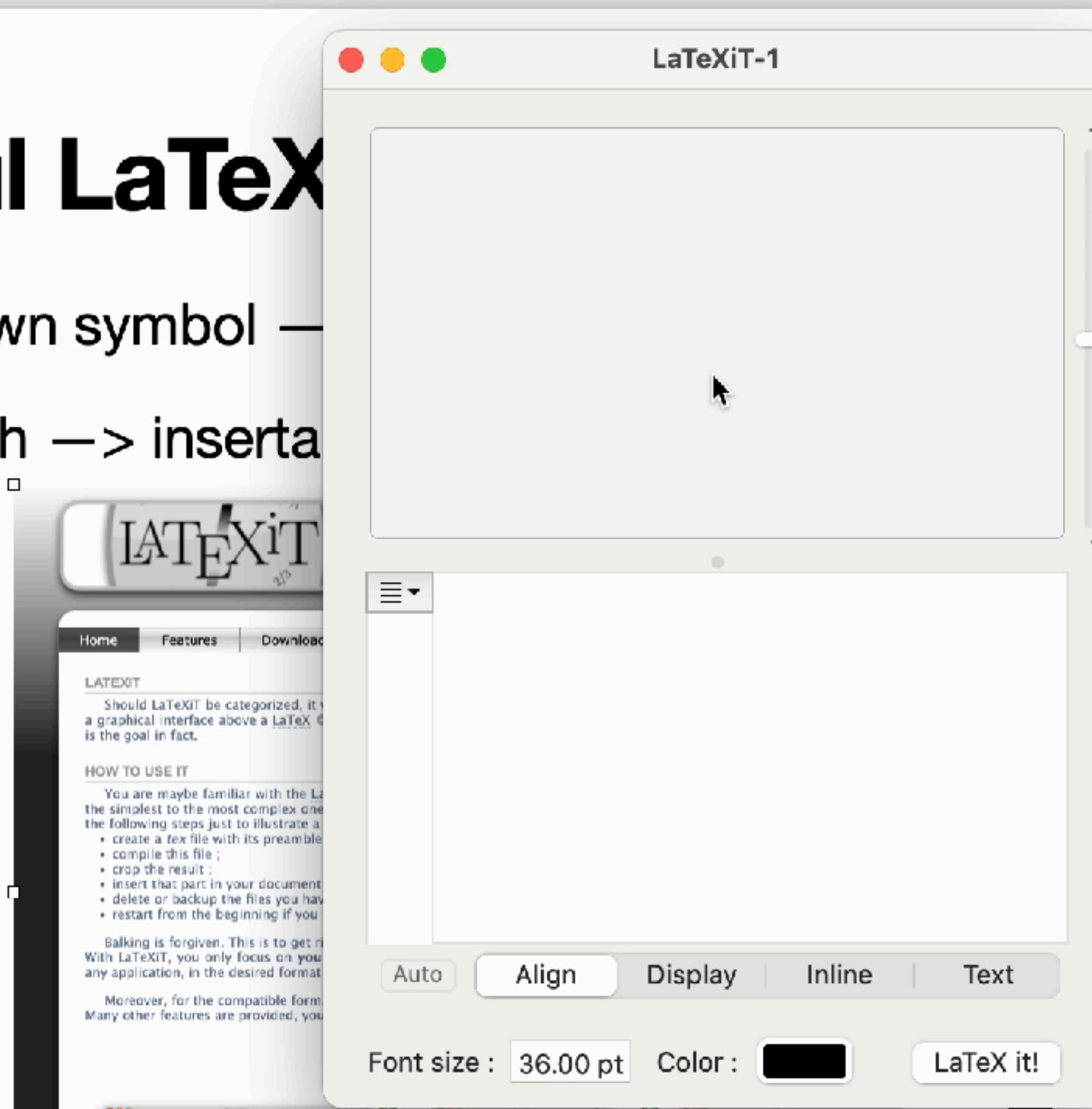
- Detexify: hand-drawn symbol → LaTeX
- LaTeXIt: LaTeX math → insertable figures





Some useful LaTeX

- [Detexify: hand-drawn symbol → LaTeX](#)
- [LaTeXiT: LaTeX math → insertion](#)



Some useful LaTeX tools

- Detexify: hand-drawn symbol → LaTeX
- LaTeXIt: LaTeX math → insertable figures
- AAS deluxetable: online tool from AAS: <https://authortools.aas.org/LATEX/make-latex.html>
- Astropy can also be useful in automatically generating tables

Bibliographies and bibtex

Bibliographies

- Many documents that you will produce will have a bibliography (or “References”)
- Consists of all papers, books, conference proceedings, miscellaneous items you cite in the text
- Different journals have different ways of formatting these
- Two ways to incorporate them into a LaTeX document:
 - Directly as entries in the LaTeX file’s bibliography:
`\bibitem[\protect\citeauthor{Bovy}{2015}]{2015ApJS..216...29B}` Bovy J., 2015, ApJS, 216, 29. doi:10.1088/0067-0049/216/2/29
 - Using a bibtex file

REFERENCES

- Abdurro’uf et al., 2022, [ApJS, 259, 35](#)
Allam Tarek J., McEwen J. D., 2021, [arXiv e-prints, p. arXiv:2105.06178](#)
Anderson L., Hogg D. W., Leistedt B., Price-Whelan A. M., Bovy J., 2018, [AJ, 156, 145](#)
Andrae R., Rix H.-W., Chandra V., 2023, [ApJS, 267, 8](#)
Bahdanau D., Cho K., Bengio Y., 2014, [arXiv e-prints, p. arXiv:1409.0473](#)
Barbary K., 2016, extinction v0.3.0, doi:10.5281/zenodo.804967, <https://doi.org/10.5281/zenodo.804967>
Bengio Y., Ducharme R., Vincent P., Janvin C., 2003, J. Mach. Learn. Res., 3, 1137–1155
Blanton M. R., et al., 2017, [AJ, 154, 28](#)
Bovy J., Rix H.-W., Green G. M., Schlafly E. F., Finkbeiner D. P., 2016, [ApJ, 818, 130](#)
Bubeck S., et al., 2023, [arXiv e-prints, p. arXiv:2303.12712](#)
Carrasco J. M., et al., 2021, [A&A, 652, A86](#)
Chase H., 2022, LangChain, <https://github.com/hwchase17/langchain>
Chopra S., Hadsell R., LeCun Y., 2005, in Proceedings - 2005 IEEE Computer Society Conference on Computer Vision and Pattern Recognition, CVPR 2005. Proceedings - 2005 IEEE Computer Society Conference on Computer Vision and Pattern Recognition, CVPR 2005. IEEE Computer Society, pp 539–546, doi:10.1109/CVPR.2005.202

Bibtex

- Bibtex automatically takes care of most annoying aspects of building a bibliography for your document
- Bibtex use a bibliography file that looks like —>
- Processed as part of running latex to generate \bibitems in whatever format you want (all automatically)
- Can create one for each project or keep a master file
- Settle on a consistent labeling scheme

```
17951 @ARTICLE{Will08a,
17952   author = {{Will}, Clifford M.},
17953   title = "{Testing the General Relativistic ``No-Hair'' Theorems Using the Galactic Center Black Hol",
17954   journal = {\apjl},
17955   keywords = {black hole physics, Galaxy: center, relativity, Astrophysics, General Relativity and Quant
17956   | year = 2008,
17957   | month = feb,
17958   | volume = {674},
17959   | number = {1},
17960   | pages = {L25},
17961   | doi = {10.1086/528847},
17962   archivePrefix = {arXiv},
17963   | eprint = {0711.1677},
17964   primaryClass = {astro-ph},
17965   | adsurl = {https://ui.adsabs.harvard.edu/abs/2008ApJ...674L..25W},
17966   | adsnote = {Provided by the SAO/NASA Astrophysics Data System}
17967 }
17968
17969 @ARTICLE{Boehmer07a,
17970   author = {{B\{"o\}hmer}, C.\~G. and {Harko}, T.},
17971   title = "Can dark matter be a Bose Einstein condensate?",
17972   journal = {\jcap},
17973   keywords = {Astrophysics, General Relativity and Quantum Cosmology, High Energy Physics - Theory},
17974   | year = 2007,
17975   | month = jun,
17976   | volume = {2007},
17977   | number = {6},
17978   | eid = {025},
17979   | pages = {025},
17980   | doi = {10.1088/1475-7516/2007/06/025},
17981   archivePrefix = {arXiv},
17982   | eprint = {0705.4158},
17983   primaryClass = {astro-ph},
17984   | adsurl = {https://ui.adsabs.harvard.edu/abs/2007JCAP...06..025B},
17985   | adsnote = {Provided by the SAO/NASA Astrophysics Data System}
17986 }
```

Using ADS to get bibtex/bibitem entries

- To add a paper to your bibtex file / reference list, use ADS if the paper is on ADS (<https://ui.adsabs.harvard.edu/>)
- Find the paper:

The screenshot shows the ADS abstract page for the paper "Core condensation in heavy halos: a two-stage theory for galaxy formation and clustering" by White, S. D. M. and Rees, M. J. The page includes a sidebar with options like View, Abstract, Citations, References, Co-Reads, Similar Papers, Volume Content, Graphics, Metrics, and Export Citation (which is circled in red). The main content area displays the title, authors, abstract, and full text sources (ADS and Publisher).

VIEW

Abstract

Citations (3439)

References (25)

Co-Reads

Similar Papers

Volume Content

Graphics

Metrics

Export Citation

FEEDBACK

Core condensation in heavy halos: a two-stage theory for galaxy formation and clustering.

Show affiliations

White, S. D. M. ; Rees, M. J.

A model of galaxy formation is developed in which dissipation plays a role along with purely gravitational processes. The gist of the model is that the distribution of the dominant mass component on all scales arises from purely gravitational clustering, while the observed sizes and luminosity functions of galaxies are determined by gas-dynamical dissipative processes. The model accounts for the large amount of nongaseous 'dark matter', apparently making up about 80% or more of the virial mass in clusters such as Coma and which may constitute massive halos around large galaxies. At work is a process of self-similar gravitational clustering in an expanding universe. The clustering builds up in hierarchical fashion; the smaller-scale virialized systems merge into an amorphous whole when they are incorporated in a larger bound cluster. Residual gas in the resulting potential wells cools and acquires sufficient concentration to self-gravitate, forming luminous galaxies up to a limiting size. This limit agrees adequately with the masses, luminosities, and radii of large galaxies. On certain specific assumptions, a luminosity function is derived that agrees reasonably well with observation.

FULL TEXT SOURCES

ADS

Publisher

Using ADS to get bibtex/bibitem entries

- To add a paper to your bibtex file / reference list, use ADS if the paper is on ADS (<https://ui.adsabs.harvard.edu/>)
- Find the paper:
- Select the format you want:

The screenshot shows the ADS (Harvard University) interface for exporting a citation record. On the left, there's a sidebar with various links like 'VIEW', 'Abstract', 'Citations (3439)', 'References (25)', 'Co-Reads', 'Similar Papers', 'Volume Content', 'Graphics', 'Metrics', and 'Export Citation' (which is highlighted in blue). Below that is a 'FEEDBACK' section. The main area displays the title 'Exporting record(s) 1 to 1 (total: 1)' and a dropdown menu 'Select Export Format' set to 'BibTeX'. It also has buttons for 'Download to File' and 'Copy to Clipboard'. A large text box below contains the BibTeX code for the selected paper:

```
@ARTICLE{1978MNRAS.183..341W,
    author = {{White}, S.~D.~M. and {Rees}, M.~J.},
    title = "{Core condensation in heavy halos: a two-stage theory for galaxy formation and clustering.}",
    journal = {\mnras},
    keywords = {Astronomical Models, Galactic Clusters, Galactic Evolution, Galactic Nuclei, Gravitational Effects, Halos, Critical Mass, Dark Matter, Dynamic Models, Interstellar Gas, Luminosity, Many Body Problem, Red Shift, Astrophysics, Formation:Galaxies},
    year = 1978,
    month = may,
    volume = {183},
    pages = {341-358},
    doi = {10.1093/mnras/183.3.341},
    adsurl = {https://ui.adsabs.harvard.edu/abs/1978MNRAS.183..341W},
```

On the right side, there's a 'FULL TEXT SOURCES' section with 'ADS' and 'Publisher' options, each accompanied by a small icon.

Using ADS to get bibtex/bibitem entries

- To add a paper to your bibtex file / reference list, use ADS if the paper is on ADS (<https://ui.adsabs.harvard.edu/>)
- Find the paper:
- Select the format you want:

The screenshot shows the ADS citation export interface. On the left, a sidebar lists options like Abstract, Citations (3439), References (25), Co-Reads, Similar Papers, Volume Content, Graphics, Metrics, and Export Citation (which is highlighted in blue). The main area displays "Exporting record(s) 1 to 1 (total: 1)". It includes a "Select Export Format" dropdown set to "AASTeX", and buttons for "Download to File" and "Copy to Clipboard". Below this is a code snippet:

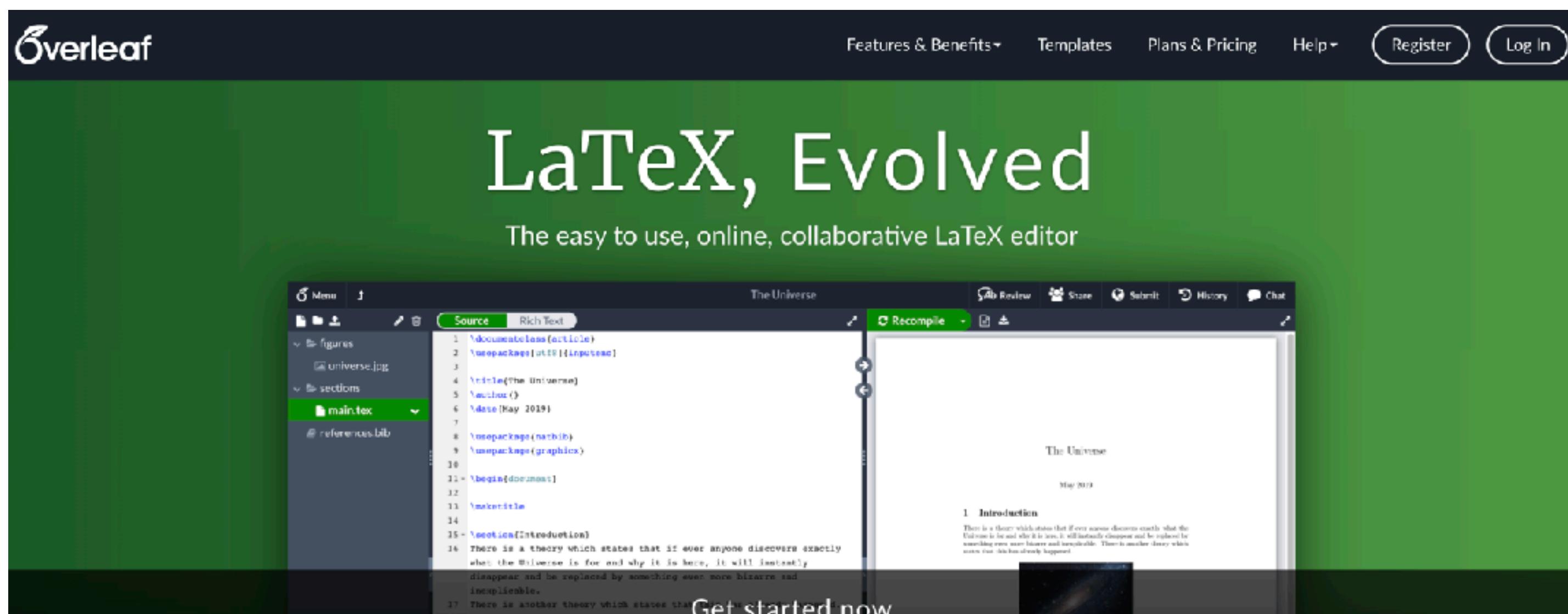
```
\bibitem[White \& Rees(1978)]{1978MNRAS.183..341W} White, S.~D.~M. \& Rees, M.~J. 1978, \mnras, 183, 341.  
doi:10.1093/mnras/183.3.341
```

. On the right, a "FULL TEXT SOURCES" section shows links for ADS and Publisher.

Overleaf

Overleaf

- Most paper/proposal writing these days happens on overleaf.com
- Advantages:
 - No need to install LaTeX and packages yourself
 - Straightforward real-time collaboration
 - Contains templates for many journals



Filters: All / Templates / Examples / Articles

Templates

Start your projects with quality LaTeX templates for journals, CVs, resumes, papers, presentations, assignments, letters, project reports, and more. Search or browse below.

 Search

Popular Tags



[Academic Journal](#)



[Bibliography](#)



[Book](#)



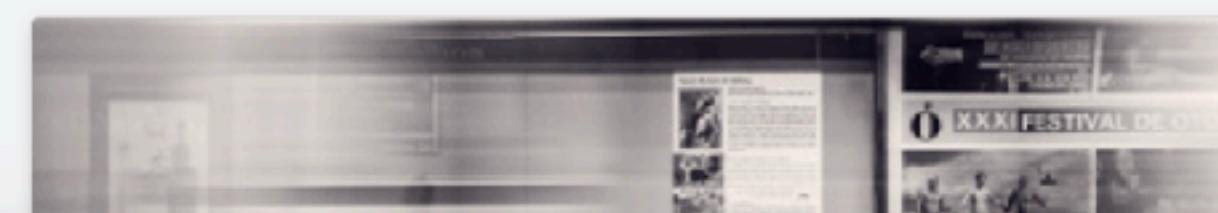
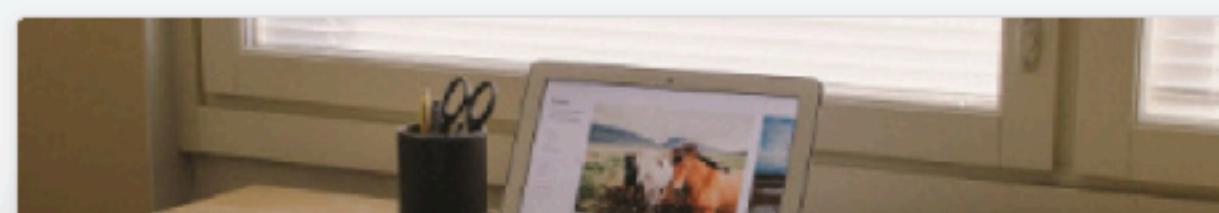
[Calendar](#)



[Résumé / CV](#)



[Formal Letter](#)



Filters: All / Templates / Examples / Articles

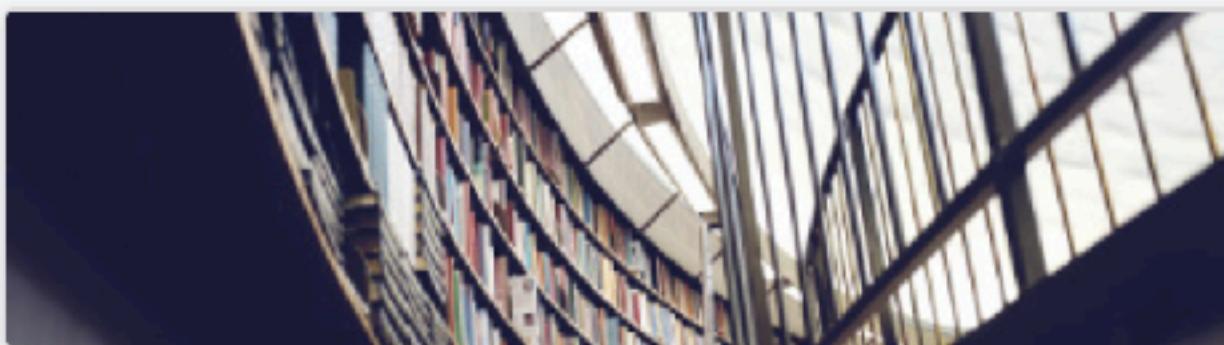
Templates

Start your projects with quality LaTeX templates for journals, CVs, resumes, papers, presentations, assignments, letters, project reports, and more. Search or browse below.

AAS journals

Search

Popular Tags



Academic Journal



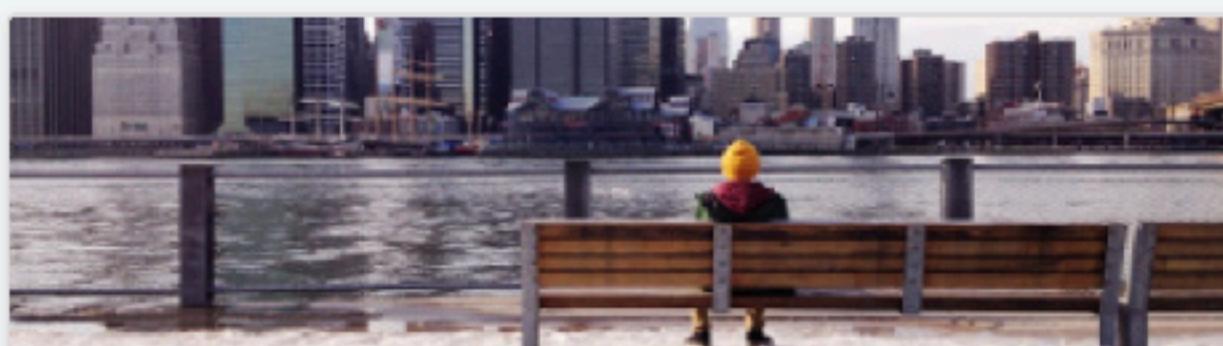
Bibliography



Book



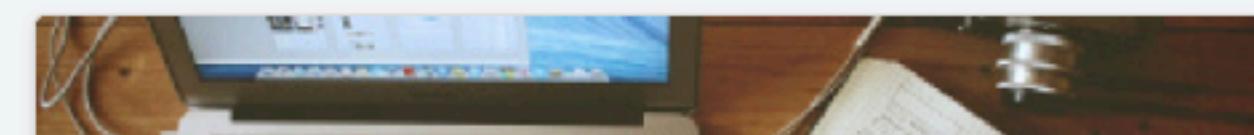
Calendar



Résumé / CV



Formal Letter



Templates

Start your projects with quality LaTeX templates for journals, CVs, resumes, papers, presentations, assignments, letters, project reports, and more. Search or browse below.

Search

AASTeX Template for submissions to AAS Journals (ApJ-AJ-ApJS-ApJL-PSJ-RNAAS) Official

The American Astronomical Society (AAS) has developed a markup package to assist authors in preparing manuscripts intended for submission to all the AAS-affiliated journals. The journals are the Astrophysical Journal (ApJ), the Astronomical Journal (AJ), ApJ Supplements (ApJS), Letters (ApJL), The Planetary Science Journal (PSJ), and Research Notes of the American Astronomical society (RNAAS). The latest LaTeX classfile is AASTeX v6.3.1 and it can be obtained here. The sample631.tex template uses this classfile to illustrate some ...

[Academic Journal](#)[American Astronomical Society](#)[Astronomy & Astrophysics](#)[American Astronomical Society - Official Templates](#)

PASP (Publications of the Astronomical Society of the Pacific) AASTeX Template

This template contains details on how to prepare and submit your articles for publication in The Publications of the Astronomical Society of the Pacific. It is a modified version of the sample631.tex template from The American Astronomical Society (AAS) markup package. The latest LaTeX classfile is AASTeX v6.3.1 and it can be obtained here. The PASPsample631.tex template uses this classfile. Once your manuscript is complete, please visit this page to submit your manuscript: [https://mc04.manuscriptcentral...](https://mc04.manuscriptcentral.com)

[Academic Journal](#)[American Astronomical Society](#)

Menu AAS PUBLISHING Home AASTeX Template for submissions to AAS Journals (ApJ-AJ-ApJS-ApJL-PSJ-RNAAS) Review Share Submit to AAS History Layout Chat

Code Editor Visual Editor Recompile

aasjournal bst
aastex631.cls
orcid-ID.png
sample631.bib
sample631.tex
samplefig.png

DRAFT VERSION SEPTEMBER 28, 2023
Typeset using L^AT_EX default style in AASTeX631

Template AASTEXArticle with Examples: v6.3.1*

GREG J. SCHWARZ¹, AUGUST MUENCH,¹
(AAS JOURNALS DATA EDITORS)

F.X. TIMMERS,^{2,3} AMY HENDRICKSON,^{4,†} JULIE STEPHEN,^{5,†}

¹American Astronomical Society
1667 K Street NW, Suite 800
Washington, DC 20006, USA
²Arizona State University
³AAS Journals Associate Editor-in-Chief
⁴TeXnology Inc.
⁵AAS Director of Publishing

ABSTRACT

This example manuscript is intended to serve as a tutorial and template for authors to use when writing their own AAS Journal articles. The manuscript includes a history of AASTeX and includes figure and table examples to illustrate these features. Information on features not explicitly mentioned in the article can be viewed in the manuscript comments or more extensive online documentation. Authors are welcome replace the text, tables, figures, and bibliography with their own and submit the resulting manuscript to the AAS Journals peer review system. The first lesson in the tutorial is to remind authors that the AAS Journals, the Astrophysical Journal (ApJ), the Astrophysical Journal Letters (ApJL), the Astronomical Journal (AJ), and the Planetary Science Journal (PSJ) all have a 250 word limit for the abstract⁵. If you exceed this length the Editorial office will ask you to shorten it. This abstract has 161 words.

Keywords: Classical Novae (251) — Ultraviolet astronomy(1736) — History of astronomy(1868) — Interdisciplinary astronomy(804)

1. INTRODUCTION

L^AT_EX¹ is a document markup language that is particularly well suited for the publication of mathematical and scientific articles (Lamport 1994). L^AT_EX was written in 1985 by Leslie Lamport who based it on the T_EX typesetting language which itself was created by Donald E. Knuth in 1978. In 1988 a suite of L^AT_EX macros were developed to investigate electronic submission and publication of AAS Journal articles (Hanisch & Biemesderfer 1989). Shortly afterwards, Chris Biemesderfer merged these macros and more into a L^AT_EX 2.08 style file called AASTeX. These early AASTeX versions introduced many common commands and practices that authors take for granted today. Substantial revisions were made by Lee Brotzman and Pierre Landau when the package was updated to v4.0. AASTeX v5.0, written in 1995 by Arthur Ogawa, upgraded to L^AT_EX 2e which uses the document class in lieu of a style file. Other improvements to version 5 included hypertext support, landscape deluxetables and improved figure support to facilitate electronic submission. AASTeX v5.2 was released in 2005 and introduced additional graphics support plus new mark up to identifier astronomical objects, datasets and facilities.

1 %% Beginning of file 'sample631.tex'
2 %%
3 %% Modified 2022 May
4 %%
5 %% This is a sample manuscript marked up using the
6 %% AASTeX v6.31 L^AT_EX 2e macros.
7 %%
8 %% AASTeX is now based on Alexey Vikhlinin's emulateapj.cls
9 %% (Copyright 2000–2015). See the classfile for details.
10 %%
11 %% AASTeX requires revtex4-1.cls and other external packages such as
12 %% latexsym, graphicx, amssymb, longtable, and epsf. Note that as of
13 %% Oct 2020, APS now uses revtex4.2e for its journals but remember that
14 %% AASTeX v6+ still uses v4.1. All of these external packages should
15 %% already be present in the modern TeX distributions but not always.
16 %% For example, revtex4.1 seems to be missing in the linux version of
17 %% TexLive 2020. One should be able to get all packages from www.ctan.org.
18 %% In particular, revtex v4.1 can be found at
19 %% <https://www.ctan.org/pkg/revtex4-1>.
20 %%
21 %% The first piece of markup in an AASTeX v6.x document is the \documentclass
22 %% command. L^AT_EX will ignore any data that comes before this command. The
23 %% documentclass can take an optional argument to modify the output style.
24 %% The command below calls the preprint style which will produce a tightly
25 %% typeset, one-column, single-spaced document. It is the default and thus
26 %% does not need to be explicitly stated.
27 %%
28 %% using aastex version 6.3
29 \documentclass[linenumber]{aastex631}
30 %%
31 %% The default is a single spaced, 10 point font, single spaced article.
32 %% There are 5 other style options available via an optional argument. They
33 %% can be invoked like this:
34 %%
35 %% \documentclass[arguments]{aastex631}
36 %%

File outline

- Introduction
- Manuscript styles
- Floats
 - Tables
 - Splitting a t...
 - Figures
 - Enhanced graph...
- Software and third ...
- Appendix information
- Gold Open Access
- Author publication ...
- Rotating tables
- Using Chinese, Japa...

Are you using the Overleaf submit to arXiv feature?

arXiv expects a zip submission that includes some of the generated files from your project. These files can be obtained directly (see: [View Generated Files](#)), but the **Submit to arXiv** option under the **Submit** button will provide you with a zip file with these included. This option is provided under the **online repositories** section of the Submit menu. If your project is using a dedicated journal template, the **Submit** button may not include options other than the journal for the template. To see all submit options, including arXiv, please make a copy of your project: the **Submit** button on the copy will include all options, not just the journal for the template.

Menu AA PUBLISHING Home AASTeX Template for submissions to AAS Journals (ApJ-AJ-ApJS-ApJL-PSJ-RNAAS) Review Share Submit to AAS History Layout Chat

Code Editor Visual Editor Normal text B I Ω ... Recompile 3 3

aasjournal bst
aastex631.cls
orcid-ID.png
sample631.bib
sample631.tex
samplefig.png

DRAFT VERSION SEPTEMBER 28, 2023
Typeset using L^AT_EX default style in AASTeX631

Template AASTeXArticle with Examples: v6.3.1*

GREG J. SCHWARZ,¹ AUGUST MUENCH,¹
(AAS JOURNALS DATA EDITORS)

F.X. TIMMES,^{2,3} AMY HRNDRICKSON,^{4,1} JULIE STREFFER,^{5,1}

¹American Astronomical Society
1607 K Street NW, Suite 800
Washington, DC 20006, USA
²Arizona State University
³AAS Journals Associate Editor-in-Chief
⁴TeXnology Inc.
⁵AAS Director of Publishing

ABSTRACT

This example manuscript is intended to serve as a tutorial and template for authors to use when writing their own AAS Journal articles. The manuscript includes a history of AASTeX and includes figure and table examples to illustrate these features. Information on features not explicitly mentioned in the article can be viewed in the manuscript comments or more extensive online documentation. Authors are welcome replace the text, tables, figures, and bibliography with their own and submit the resulting manuscript to the AAS Journals peer review system. The first lesson in the tutorial is to remind authors that the AAS Journals, the Astrophysical Journal (ApJ), the Astrophysical Journal Letters (ApJL), the Astronomical Journal (AJ), and the Planetary Science Journal (PSJ) all have a 250 word limit for the abstract^a. If you exceed this length the Editorial office will ask you to shorten it. This abstract has 161 words.

Keywords: Classical Novae (251) — Ultraviolet astronomy(1736) — History of astronomy(1868) — Interdisciplinary astronomy(804)

1. INTRODUCTION

L^AT_EX¹ is a document markup language that is particularly well suited for the publication of mathematical and scientific articles (Lamport 1994). L^AT_EX was written in 1985 by Leslie Lamport who based it on the T_EX typesetting language which itself was created by Donald E. Knuth in 1978. In 1988 a suite of L^AT_EX macros were developed to investigate electronic submission and publication of AAS Journal articles (Hanisch & Biemesderfer 1989). Shortly afterwards, Chris Biemesderfer merged these macros and more into a L^AT_EX 2.08 style file called AASTeX. These early AASTeX versions introduced many common commands and practices that authors take for granted today. Substantial revisions were made by Lee Brotzman and Pierre Landau when the package was updated to v4.0. AASTeX v5.0, written in 1995 by Arthur Ogawa, upgraded to L^AT_EX 2e which uses the document class in lieu of a style file. Other improvements to version 5 included hypertext support, landscape deluxtables and improved figure support to facilitate electronic submission. AASTeX v5.2 was released in 2006 and introduced additional graphics support plus new mark up to identifier astronomical objects, datasets and facilities.

1 %% Beginning of file 'sample631.tex'
2 %%
3 %% Modified 2022 May
4 %%
5 %% This is a sample manuscript marked up using the
6 %% AASTeX v6.31 L^AT_EX 2e macros.
7 %%
8 %% AASTeX is now based on Alexey Vikhlinin's emulateapj.cls
9 %% (Copyright 2000-2015). See the classfile for details.
10 %%
11 %% AASTeX requires revtex4-1.cls and other external packages such as
12 %% latexsym, graphicx, amssymb, longtable, and epsf. Note that as of
13 %% Oct 2020, APS now uses revtex4.2e for its journals but remember that
14 %% AASTeX v6+ still uses v4.1. All of these external packages should
15 %% already be present in the modern TeX distributions but not always.
16 %% For example, revtex4.1 seems to be missing in the linux version of
17 %% TexLive 2020. One should be able to get all packages from www.ctan.org.
18 %% In particular, revtex v4.1 can be found at
19 %% <https://www.ctan.org/pkg/revtex4-1>.
20 %%
21 %% The first piece of markup in an AASTeX v6.x document is the \documentclass
22 %% command. L^AT_EX will ignore any data that comes before this command. The
23 %% documentclass can take an optional argument to modify the output style.
24 %% The command below calls the preprint style which will produce a tightly
25 %% typeset, one-column, single-spaced document. It is the default and thus
26 %% does not need to be explicitly stated.
27 %%
28 %% using aastex version 6.3
29 \documentclass[linenumbers]{aastex631}
30 %%
31 %% The default is a single spaced, 10 point font, single spaced article.
32 %% There are 5 other style options available via an optional argument. They
33 %% can be invoked like this:
34 %%
35 %% \documentclass[arguments]{aastex631}
36 %%

Download

Source PDF

Actions

Copy Project

Word Count

Sync

Dropbox

Git

GitHub

Settings

Compiler pdfLaTeX

TeX Live version 2023

Main document sample631.tex

Spell check English

Dictionary Edit

Auto-complete On

Auto-close Brackets On

Template for submissions to AAS Journals (ApJ-AJ-ApJS-ApJL-PSJ-RNAAS)

Editor | Normal text | B I | Σ Ω | ... | Q | Recompile | 3 | Download

of file 'sample631.tex'

2022 May

sample manuscript marked up using the v6.31 LaTeX 2e macros.

now based on Alexey Vikhlinin's emulateapj.cls (2000–2015). See the classfile for details.

quires revtex4-1.cls and other external packages such as graphicx, amssymb, longtable, and epsf. Note that as of APS now uses revtex4.2e for its journals but remember that + still uses v4.1. All of these external packages should be present in the modern TeX distributions but not always. le, revtex4.1 seems to be missing in the linux version of 0.20. One should be able to get all packages from www.ctan.org. ular, revtex v4.1 can be found at www.ctan.org/pkg/revtex4-1.

piece of markup in an AASTeX v6.x document is the \documentclass{aastex631}. LaTeX will ignore any data that comes before this command. The class can take an optional argument to modify the output style. nd below calls the preprint style which will produce a tightly one-column, single-spaced document. It is the default and thus need to be explicitly stated.

tex version 6.3
ss[linenumbers]{aastex631}

It is a single spaced, 10 point font, single spaced article. 5 other style options available via an optional argument. They invoked like this:

class[arguments]{aastex631}

DRAFT VERSION SEPTEMBER 28, 2023
Typeset using L^AT_EX default style in AASTeX631

Template AASTeXArticle with Examples: v6.3.1*

GREG J. SCHWARZ,¹ AUGUST MUENCH,¹
(AAS JOURNALS DATA EDITORS)

F.X. TIMMES,^{2,3} AMY HENDRICKSON,^{4,1} JULIE STEFFEN,^{5,1}

¹ American Astronomical Society
1667 K Street NW, Suite 800
Washington, DC 20006, USA

² Arizona State University

³ AAS Journals Associate Editor-in-Chief

⁴ TeXnology Inc.

⁵ AAS Director of Publishing

ABSTRACT

This example manuscript is intended to serve as a tutorial and template for authors to use when writing their own AAS Journal articles. The manuscript includes a history of AASTeX and includes figure and table examples to illustrate these features. Information on features not explicitly mentioned in the article can be viewed in the manuscript comments or more extensive online documentation. Authors are welcome replace the text, tables, figures, and bibliography with their own and submit the resulting manuscript to the AAS Journals peer review system. The first lesson in the tutorial is to remind authors that the AAS Journals, the Astrophysical Journal (ApJ), the Astrophysical Journal Letters (ApJL), the Astronomical Journal (AJ), and the Planetary Science Journal (PSJ) all have a 250 word limit for the abstract^a. If you exceed this length the Editorial office will ask you to shorten it. This abstract has 161 words.

Keywords: Classical Novae (251) — Ultraviolet astronomy(1736) — History of astronomy(1868) — Interdisciplinary astronomy(804)

1. INTRODUCTION

LaTeX¹ is a document markup language that is particularly well suited for the publication of mathematical and scientific articles (Lamport 1994). LaTeX was written in 1985 by Leslie Lamport who based it on the TeX typesetting language which itself was created by Donald E. Knuth in 1978. In 1988 a suite of LaTeX macros were developed to investigate electronic submission and publication of AAS Journal articles (Hanisch & Biemesderfer 1989). Shortly afterwards, Chris Biemesderfer merged these macros and more into a LaTeX 2.08 style file called AASTeX. These early AASTeX versions introduced many common commands and practices that authors take for granted today. Substantial revisions were made by Lee Brotzman and Pierre Landau when the package was updated to v4.0. AASTeX v5.0, written in 1995 by Arthur Ogawa, upgraded to LaTeX 2e which uses the document class in lieu of a style file. Other improvements to version 5 included hypertext support, landscape deluxtables and improved figure support to facilitate electronic submission. AASTeX v5.2 was released in 2005 and introduced additional graphics support plus new mark up to identifier astronomical objects, datasets and facilities.

Menu Home AASTeX Template for submissions to AAS Journals (ApJ-AJ-ApJS-ApJL-PSJ-RNAAS) (Copy) Review Share Submit History Layout Chat

Code Editor Visual Editor Normal text B I Σ Ω Recompile

aasjournal bst
aastex631.cls
orcid-ID.png
sample631.bib
sample631.tex
samplefig.png

DRAFT VERSION SEPTEMBER 28, 2023
Typeset using L^AT_EX default style in AASTeX631

Template AASTEXArticle with Examples: v6.3.1*

GREG J. SCHWARZ,¹ AUGUST MUENCH,¹
(AAS JOURNALS DATA EDITORS)

F.X. TIMMES,^{2,3} AMY HENDRICKSON,^{4,†} JULIE STEFFEN,^{5,1}

¹American Astronomical Society
1667 K Street NW, Suite 300
Washington, DC 20006, USA
²Arizona State University
³AAS Journals Associate Editor-in-Chief
⁴TechXology Inc.
⁵AAS Director of Publishing

ABSTRACT

This example manuscript is intended to serve as a tutorial and template for authors to use when writing their own AAS Journal articles. The manuscript includes a history of AASTeX and includes figure and table examples to illustrate these features. Information on features not explicitly mentioned in the article can be viewed in the manuscript comments or more extensive online documentation. Authors are welcome replace the text, tables, figures, and bibliography with their own and submit the resulting manuscript to the AAS Journals peer review system. The first lesson in the tutorial is to remind authors that the AAS Journals, the Astrophysical Journal (ApJ), the Astrophysical Journal Letters (ApJL), the Astronomical Journal (AJ), and the Planetary Science Journal (PSJ) all have a 250 word limit for the abstract^{a)}. If you exceed this length the Editorial office will ask you to shorten it. This abstract has 161 words.

Keywords: Classical Novae (251) — Ultraviolet astronomy(1736) — History of astronomy(1868) — Interdisciplinary astronomy(804)

1. INTRODUCTION

L^AT_EX¹ is a document markup language that is particularly well suited for the publication of mathematical and scientific articles (Lamport 1994). L^AT_EX was written in 1985 by Leslie Lamport who based it on the T_EX typesetting language which itself was created by Donald E. Knuth in 1978. In 1988 a suite of L^AT_EX macros were developed to investigate electronic submission and publication of AAS Journal articles (Hanisch & Biemesderfer 1989). Shortly afterwards, Chris Biemesderfer merged these macros and more into a L^AT_EX 2.08 style file called AASTeX. These early AASTeX versions introduced many common commands and practices that authors take for granted today. Substantial revisions were made by Lee Brotzman and Pierre Landau when the package was updated to v4.0. AASTeX v5.0, written in 1995 by Arthur Ogawa, upgraded to L^AT_EX 2^c which uses the document class in lieu of a style file. Other improvements to version 5 included hypertext support, landscape deluxetables and improved figure support to facilitate electronic submission. AASTeX v5.2 was released in 2005 and introduced additional graphics support plus new mark

1 Beginning of file 'sample631.tex'
2
3 %% Modified 2022 May
4 %%
5 %% This is a sample manuscript marked up using the
6 %% AASTeX v6.31 L^AT_EX 2^c macros.
7 %%
8 %% AASTeX is now based on Alexey Vikhlinin's emulateapj.cls
9 %% (Copyright 2000–2015). See the classfile for details.
10 %%
11 %% AASTeX requires revtex4-1.cls and other external packages such as
12 %% latexsym, graphicx, amssymb, longtable, and epsf. Note that as of
13 %% Oct 2020, APS now uses revtex4.2e for its journals but remember that
14 %% AASTeX v6+ still uses v4.1. All of these external packages should
15 %% already be present in the modern TeX distributions but not always.
16 %% For example, revtex4.1 seems to be missing in the linux version of
17 %% TexLive 2020. One should be able to get all packages from www.ctan.org.
18 %% In particular, revtex v4.1 can be found at
19 %% <https://www.ctan.org/pkg/revtex4-1>.
20 %%
21 %% The first piece of markup in an AASTeX v6.x document is the \documentclass
22 %% command. L^AT_EX will ignore any data that comes before this command. The
23 %% documentclass can take an optional argument to modify the output style.
24 %% The command below calls the preprint style which will produce a tightly
25 %% typeset, one-column, single-spaced document. It is the default and thus
26 %% does not need to be explicitly stated.
27 %%
28 %% using aastex version 6.3
29 \documentclass[linenumbers]{aastex631}
30 %%
31 %% The default is a single spaced, 10 point font, single spaced article.
32 %% There are 5 other style options available via an optional argument. They
33 %% can be invoked like this:
34 %%
35 %% \documentclass[arguments]{aastex631}

Menu Home AASTeX Template for submissions to AAS Journals (ApJ-AJ-ApJS-ApJL-PSJ-RNAAS) (Copy) Review Share Submit History Layout Chat

Code Editor View

aasjournal bst
aastex631.cls
orcid-ID.png
sample631.bib
sample631.tex
samplefig.png

File outline

- Introduction
- Manuscript styles
- Floats
- Tables
 - Splitting a table
 - Figures
 - Enhanced graphics
- Software and third party tools
- Appendix information
- Gold Open Access
- Author publication metrics
- Rotating tables
- Using Chinese characters

Submit

Featured

Overleaf Gallery

Overleaf Gallery

Share your document publicly as a LaTeX template to be reused by others right here on Overleaf.

Submit as a template

F1000Research

F1000 Research

The Open Science publishing platform for life scientists with immediate publication and transparent refereeing.

Submit to F1000Research

Search

Academic Journals, Online Repositories, Author Services or Conference Proceedings

Academic Journals

F1000Research

F1000 Research

The Open Science publishing platform for life scientists with immediate publication and transparent refereeing.

PeerJ Journal

PeerJ

PeerJ is an Open Access publisher of scholarly articles, serving the Biological and Medical sciences.

samples: v6.3.1*
MUENCH,¹
(ORS)
CLIE STEPPEN,¹
ety
10
A
n-Chief
g

and template for authors to use when includes a history of AASTeX and includes on features not explicitly mentioned more extensive online documentation. biography with their own and submit the n. The first lesson in the tutorial is to journal (ApJ), the Astrophysical Journaletary Science Journal (PSJ) all have a e Editorial office will ask you to shorten
736) — History of astronomy(1868) —
suited for the publication of mathematical and e Lamport who based it on the TeX typesetting 1988 a suite of LaTeX macros were developed articles (Hanisch & Biemesderfer 1989). Shortly aTeX 2.08 style file called AASTeX. These early that authors take for granted today. Substantial package was updated to v4.0. AASTeX v5.0, the document class in lieu of a style file. Other tables and improved figure support to facilitate additional graphics support plus new mark

Menu Home AASTeX Template History Layout Chat

aasjournal bst aastex631.cls orcid-ID.png sample631.bib sample631.tex samplefig.png

File outline

- Introduction
- Manuscript styles
- Floats
 - Tables
 - Splitting a t...
 - Figures
 - Enhanced graph...
- Software and third ...
- Appendix information
- Gold Open Access
- Author publication ...
- Rotating tables
- Using Chinese language

AASTeX v6.3.1 · Muench, J. · Authors · JULIE STEFFEN, E. · step · 20 · 2A · n-Clisf · 0

and template for authors to use when ... uses a history of AASTeX and includes ... on features not explicitly mentioned ... more extensive online documentation. ... biography with their own and submit the ... The first lesson in the tutorial is to ... Journal (ApJ), the Astrophysical Journal ... tary Science Journal (PSJ) all have a ... Editorial office will ask you to shorten ... 736) — History of astronomy(1868) — ... suited for the publication of mathematical and ... e Lamport who based it on the TeX typesetting ... 1988 a suite of LaTeX macros were developed ... articles (Hanisch & Biemesderfer 1989). Shortly ... aTeX 2.08 style file called AASTeX. These early ... that authors take for granted today. Substantial ... package was updated to v4.0. AASTeX v5.0, ... the document class in lieu of a style file. Other ... tables and improved figure support to facilitate ... need additional graphics support plus new mark ...

Submit

Featured

Overleaf Gallery

Share your document publicly as a LaTeX template to be reused by others right here on Overleaf.

[Submit as a template](#)

F1000Research

The Open Science publishing platform for life scientists with immediate publication and transparent refereeing.

[Submit to F1000Research](#)

Search

aas

The Astrophysical Journal Letters *Journal*

 The AAS publishes four of the foremost research journals in the world devoted to recent developments, discoveries, and theories in astronomy and

[Submit to Astrophysical Journal Letters](#)

Transactions on Information Systems *Journal*

 A scholarly journal that publishes previously unpublished high-quality scholarly articles in all areas of information retrieval.

[Submit to TOIS](#)

American Astronomical Society *Journal*

Mass Timber Construction Journal *Journal*

Menu Home AASTeX Template

Submit

Featured

Overleaf Gallery

Share your document publicly as a LaTeX template to be reused by others right here on Overleaf.

Overleaf Gallery

Submit as a template

F1000Research

The Open Science publishing platform for life scientists with immediate publication and transparent refereeing.

F1000 Research

Submit to F1000Research

Search

arxiv

arXiv

arXiv is an open repository of scientific preprints in fields such as mathematics, physics, astronomy, computer science.

arXiv.org

INArxiv

INArxiv is a multidisciplinary preprint service built and managed by the Indonesian open science community.

INArxiv

Submit your paper to the arXiv

Submit to the INArxiv

MarXiv

SocArXiv

Repository Repository

History Layout Chat

samples: v6.3.1*
MUENCH, J.
ors)
JULIE STEFFEN,
stg
20
SA
n-Chief
a
and template for authors to use when does a history of AASTeX and includes ion features not explicitly mentioned more extensive online documentation. biography with their own and submit the n. The first lesson in the tutorial is to urnal (ApJ), the Astrophysical Journal etary Science Journal (PSJ) all have a Editorial office will ask you to shorten
736) — History of astronomy(1868) —
suited for the publication of mathematical and le Lamport who based it on the TeX typesetting 1988 a suite of LaTEX macros were developed articles (Hanisch & Biemesderfer 1989). Shortly aTeX 2.08 style file called AASTeX. These early that authors take for granted today. Substantial package was updated to v4.0. AASTeX v5.0, the document class in lieu of a style file. Other tables and improved figure support to facilitate ced additional graphics support plus new mark

Menu Home AASTeX Template for submissions to AAS Journals (ApJ-AJ-ApJS-ApJL-PSJ-RNAAS) (Copy) Review Share Submit History Layout Chat

Code Editor View

aasjournal bst
aastex631.cls
orcid-ID.png
sample631.bib
sample631.tex
samplefig.png

Submit

Back to Journals and Services

The arXiv accepts submissions only from registered authors. To begin the submission of a new manuscript, please log in to the arXiv using your email and arXiv password.

Please note that some projects that compile without errors on Overleaf may encounter unexpected compilation errors when submitted to the arXiv service. This [help page](#) outlines some common reasons, and how to solve them.

Step 1: Download files

Download project ZIP with submission files (e.g. .bbl)

Download PDF file of your article

Step 2: Submit your manuscript

Submit to arXiv

File outline

- Introduction
- Manuscript styles
- Floats
 - Tables
 - Splitting a t...
 - Figures
 - Enhanced graph...
- Software and third ...
- Appendix information
- Gold Open Access
- Author publication ...
- Rotating tables
- Using Chinese, Japa...

Keywords: Classical Novae (251) — Ultraviolet astronomy(1736) — History of astronomy(1868) — Interdisciplinary astronomy(804)

1. INTRODUCTION

LaTeX¹ is a document markup language that is particularly well suited for the publication of mathematical and scientific articles (Lamport 1994). LaTeX was written in 1985 by Leslie Lamport who based it on the TeX typesetting language which itself was created by Donald E. Knuth in 1978. In 1988 a suite of LaTeX macros were developed to investigate electronic submission and publication of AAS Journal articles (Hanisch & Biemesderfer 1989). Shortly afterwards, Chris Biemesderfer merged these macros and more into a LaTeX 2.08 style file called AASTeX. These early AASTeX versions introduced many common commands and practices that authors take for granted today. Substantial revisions were made by Lee Brotzman and Pierre Landau when the package was updated to v4.0. AASTeX v5.0, written in 1995 by Arthur Ogawa, upgraded to LaTeX 2e which uses the document class in lieu of a style file. Other improvements to version 5 included hypertext support, landscape deluxetables and improved figure support to facilitate electronic submission. AASTeX v5.2 was released in 2005 and introduced additional graphics support plus new mark

```
1 %% Beginning of file
2 %%
3 %% Modified by aastex631.cls
4 %%
5 %% This is
6 %% AASTeX
7 %%
8 %% AASTeX
9 %% (Copyright)
10 %%
11 %% AASTeX
12 %% Latexsy
13 %% Oct 202
14 %% AASTeX
15 %% already
16 %% For exa
17 %% TexLive
18 %% In part
19 %% https://
20 %%
21 %% The fir
22 %% command
23 %% documen
24 %% The com
25 %% typeset, one-column, single-spaced document. It is the default and thus
26 %% does not need to be explicitly stated.
27 %%
28 %% using aastex version 6.3
29 \documentclass[linenumber]{aastex631}
30 %%
31 %% The default is a single spaced, 10 point font, single spaced article.
32 %% There are 5 other style options available via an optional argument. They
33 %% can be invoked like this:
34 %%
35 %% \documentclass[arguments]{aastex631}
```