Draft paper, nnn:i (pp), YYYY Month day

THE PAPER'S TITLE GOES HERE

Your name[1], Coauthor one[2], and Coauthor two[1,3]

[1]The first affiliation in the list.; your@email.address
[2]Another affilation can be put here.
[3]And generally as many affiliations as you like.
Received YYYY MM DD; accepted YYYY MM DD; published YYYY MM DD

You have completed the reproduction pipeline and are ready to configure and implement it for your own research. This template reproduction pipeline and document contains almost all the elements that you will need in a research project containing the downloading of raw data, processing it, including them in plots and report, including this abstract, figures and bibliography. If you use this pipeline in your work, don't forget to add a notice to clearly let the readers know that your work is reproducible. If this pipeline proves useful in your research, please cite Akhlaghi and Ichikawa (2015).

Keywords: Add some keywords for your research here.
Reproducible paper: Reproduction pipeline v0-109-gbd1e95c (https://gitlab.com/makhlaghi/reproducible-paper).

1. CONGRATULATIONS!

Congratulations on running the reproduction pipeline! You can now follow the checklist in the `README.md` file to customize this pipeline to your exciting research project.

Just don't forget to *never* use any numbers or fixed strings (for example database urls like https://some.webpage.com/example/server) directly within your LaTeX source. Read them directly from your configuration files or outputs of the programs as part of the reproduction pipeline and import them into LaTeX as macros through the `tex/pipeline.tex` file. See the several examples within the pipeline for a demonstration. For some recent real-world examples, the reproduction pipelines for Sections 4 and 7.3 of Bacon et al. (2017) are available at zenodo.1164774[1], or zenodo.1163746[2]. Working in this way, will let you focus clearly on your science and not have to worry about fixing this or that number/name in the text.

Just as a demonstration of creating plots within LaTeX (using the PGFPlots package), in Figure 1 we show a simple plot, where the Y axis is the square of the X axis. The minimum value in this distribution is 1.000, and 2500.000 is the maximum. Take a look into the LaTeX source and you'll see these numbers are actually macros that were calculated from the same dataset (they will change if the dataset, or function that produced it, changes).

The individual PDF file of Figure 1 is available under the `tex/build/tikz/` directory of your build directory. You can use this PDF file in other contexts (for example in slides showing your progress or after publishing the work). If you want to directly use the PDF file in the figure without having to let TiKZ decide if it should be remade or not, you can also comment the `makepdf` macro at the top of this LaTeX source file.

PGFPlots is a great tool to build the plots within LaTeX and removes the necessity to add further dependencies (to create the plots) to your reproduction pipeline. High-level language libraries like Matplotlib do exist to also generate plots. However, bare in mind that they require many dependencies (Python, Numpy and etc). Installing these dependencies from source (after several years when the binaries are no longer available in common repositories), is not easy and will harm the reproducibility of your paper.

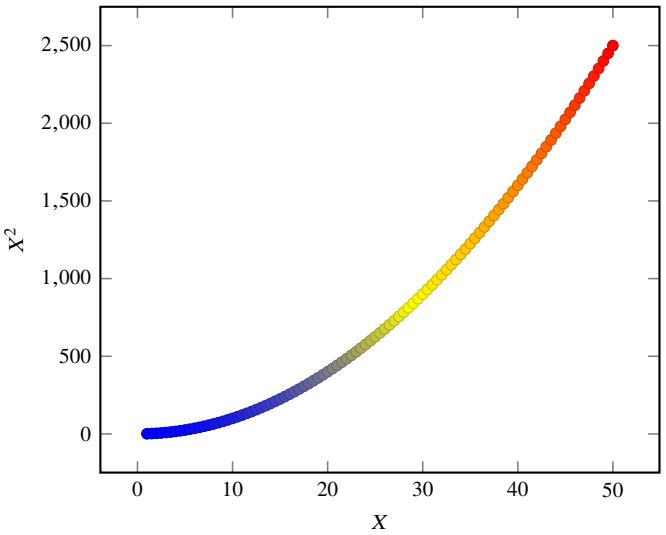

Figure 1: A very basic X^2 plot for demonstration.

Furthermore, since PGFPlots is built by LaTeX it respects all the properties of your text (for example line width and fonts and etc), so the final plot blends in your paper much more nicely. It also has a wonderful manual[3].

This pipeline also defines two LaTeX macros that allow you to mark text within your document as *new* and *notes*. For example, this text has been marked as `new`. [While this one is marked as `tonote`.] If you comment the line (by adding a '`%`' at the start of the line or simply deleting the line) that defines `highlightchanges`, then the one that was marked `new` will

[1] https://gitlab.com/makhlaghi/muse-udf-origin-only-hst-magnitudes
[2] https://gitlab.com/makhlaghi/muse-udf-photometry-astrometry
[3] http://mirrors.ctan.org/graphics/pgf/contrib/pgfplots/doc/pgfplots.pdf

become black (totally blend in with the rest of the text) and the one marked `tonote` will not be in the final PDF. You can thus use `highlightchanges` to easily make copies of your research for existing coauthors (who are just interested in the new parts or notes) and new co-authors (who don't want to be distracted by these issues in their first time reading).

2. NOTICE AND CITATIONS

To encourage other scientists to publish similarly reproducible papers, please add a notice close to the start of your paper or in the end of the abstract clearly mentioning that your work is fully reproducible.

For the time being, we haven't written a specific paper only for this reproduction pipeline, so until then, we would be grateful if you could cite the first paper that used the first version of this pipeline: Akhlaghi and Ichikawa (2015).

After publication, don't forget to upload all the necessary data, software source code and the reproduction pipeline to a long-lasting host like Zenodo (https://zenodo.org).

3. ACKNOWLEDGEMENTS

Please include the following two paragraphs in the Acknowledgement section of your paper. This reproduction pipeline was developed in parallel with Gnuastro, so it benefited from the same grants. If you don't use any of these packages in the final/customized pipeline, please remove them.

This research was partly done using GNU Astronomy Utilities (Gnuastro, ascl.net/1801.009) version 0.7.63-39ab, and reproduction pipeline v0-109-gbd1e95c. Work on Gnuastro and the reproduction pipeline has been funded by the Japanese Ministry of Education, Culture, Sports, Science, and Technology (MEXT) scholarship and its Grant-in-Aid for Scientific Research (21244012, 24253003), the European Research Council (ERC) advanced grant 339659-MUSICOS, European Union's Horizon 2020 research and innovation programme under Marie Sklodowska-Curie grant agreement No 721463 to the SUNDIAL ITN, and from the Spanish Ministry of Economy and Competitiveness (MINECO) under grant number AYA2016-76219-P.

The following free software tools were also critical component of this research (in alphabetical order): Bzip2 1.0.6, CFITSIO 3.45, CMake 3.12.4, cURL 7.62.0, Git 2.19.1, GNU Bash 4.4.18, GNU Coreutils 8.30, GNU AWK 4.2.1, GNU Grep 3.1, GNU Libtool 2.4.6, GNU Make 4.2.90, GNU Sed 4.5, GNU Scientific Library (GSL) 2.5, GNU Tar 1.30, GNU Which 2.21, Lzip 1.20, GPL Ghostscript 9.26, Libgit2 0.26.0, Libtiff 4.0.10, WCSLIB 6.2, XZ Utils 5.2.4, and ZLib 1.2.11. The final paper was produced with TEX Live 2018, using the following packages: TEX 3.14159265, EC 1.0, NewTX 1.554, Fontaxes 1.0d, Keyval, 2.7a, Etoolbox 2.5f, Xcolor 2.12, Setspace 6.7a, Caption 2018-10-05, Footmisc 5.5b, Datetime 2.60, Fmtcount 3.05, Titlesec 2.10.2, Preprint 2011, Ulem 2016-06-24, BibLATEX 3.12, Biber 2.12, Logreq 1.0, PGF/TiKZ 3.0.1a, PGFPlots 1.16, FP 2016-06-24, Courier 2016-06-24, TEX-gyre 2.501, TXFonts 2016-06-24, Times 2016-06-24. We are very grateful to all their creators for freely providing this necessary infrastructure. This research would not be possible without them.

References

Akhlaghi, M. and T. Ichikawa (Sept. 2015). *ApJS*, 220, 1.
Bacon, R. et al. (Nov. 2017). *A&A*, 608, A1.