

PyKEP: A Python library for preliminary interplanetary trajectories design

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Summary

YAY!

Statement of need

PyKEP is Gala also relies heavily on and interfaces well with the implementations of physical units and astronomical coordinate systems in the Astropy package ([Astropy Collaboration, 2013](#)) (`astropy.units` and `astropy.coordinates`).

Gala was designed to be used by both astronomical researchers and by students in courses on gravitational dynamics or astronomy. It has already been used in a number of scientific publications ([Pearson et al., 2017](#)) and has also been used in graduate courses on Galactic dynamics to, e.g., provide interactive visualizations of textbook material ([Binney & Tremaine, 2008](#)). The combination of speed, design, and support for Astropy functionality in Gala will enable exciting scientific explorations of forthcoming data releases from the *Gaia* mission ([Gaia Collaboration, 2016](#)) by students and experts alike.

Mathematics

Single dollars (\$) are required for inline mathematics e.g. $f(x) = e^{\pi/x}$

Double dollars make self-standing equations:

$$\Theta(x) = \begin{cases} 0 & \text{if } x < 0 \\ 1 & \text{else} \end{cases}$$

You can also use plain \LaTeX for equations

$$\hat{f}(\omega) = \int_{-\infty}^{\infty} f(x) e^{i\omega x} dx \quad (1)$$

and refer to [Equation 1](#) from text.

Citations

Citations to entries in paper.bib should be in [rMarkdown](#) format.

If you want to cite a software repository URL (e.g. something on GitHub without a preferred citation) then you can do it with the example BibTeX entry below for Smith et al. ([2020](#)).

28 For a quick reference, the following citation commands can be used: - @author:2001 ->
29 "Author et al. (2001)" - [@author:2001] -> "(Author et al., 2001)" - [@author1:2001;
30 @author2:2001] -> "(Author1 et al., 2001; Author2 et al., 2002)"

31 **Figures**

32 Figures can be included like this: Caption for example figure. and referenced from text using
33 [section](#) .

34 Figure sizes can be customized by adding an optional second parameter: Caption for example
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36 **Acknowledgements**

37 We acknowledge contributions from and support from ...

38 **References**

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