zenodo and Software

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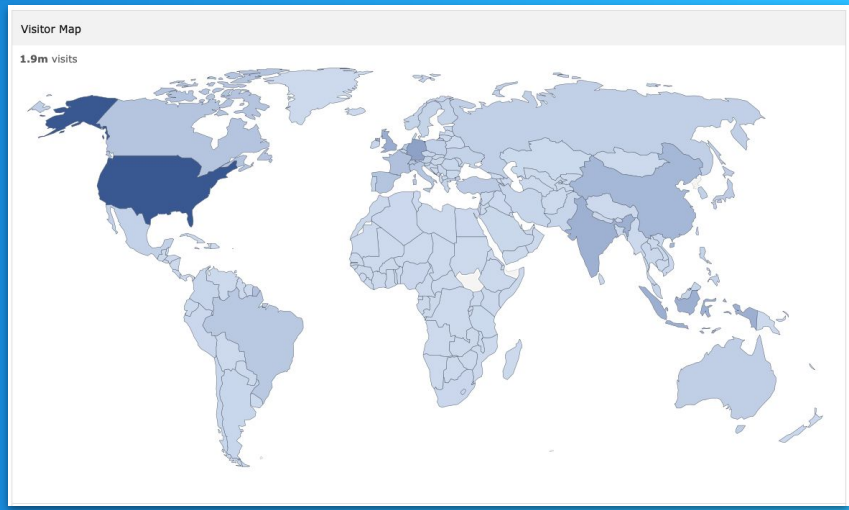
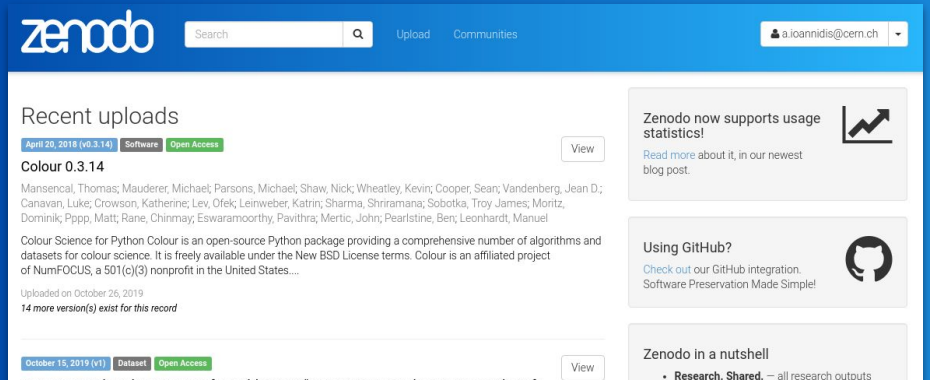
Zenodo in numbers

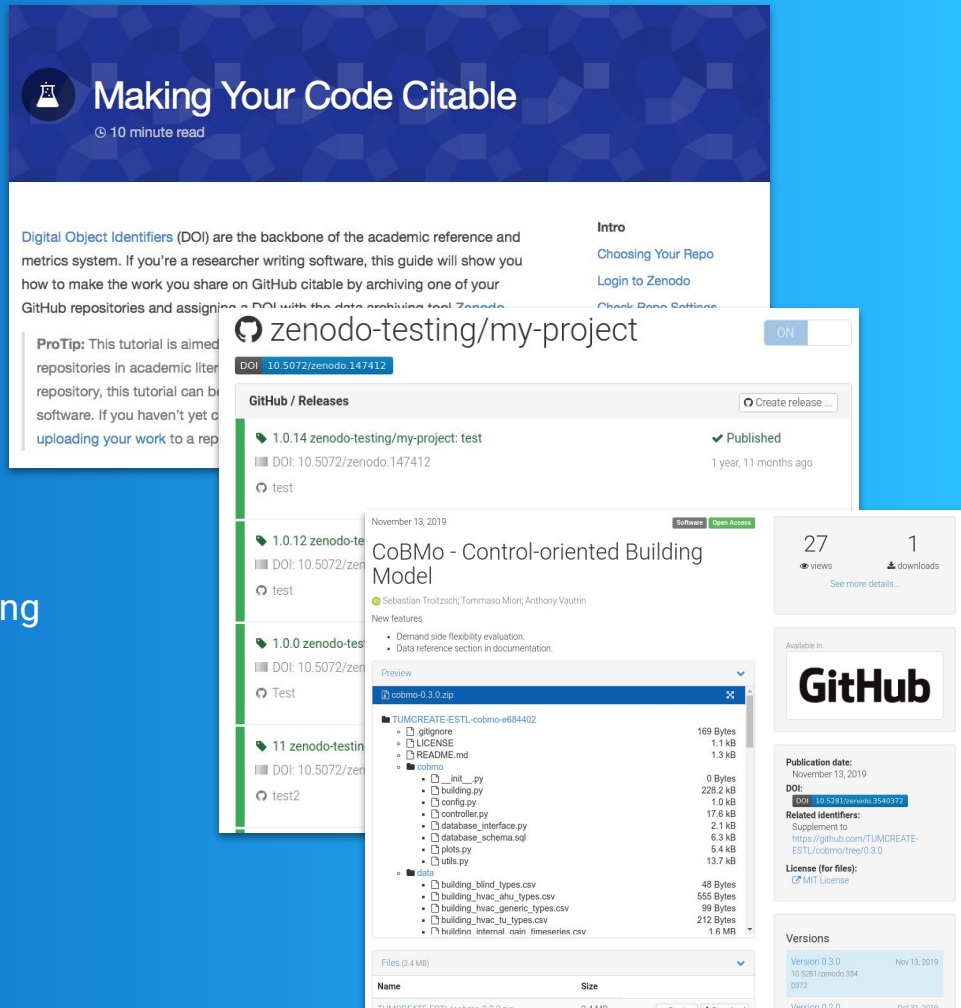
- ~1.5M records
  - 800k text
  - 500k images
  - **70k software**
  - 55k datasets
- 145TB data, ~3M files
- 1.4M visitors/year





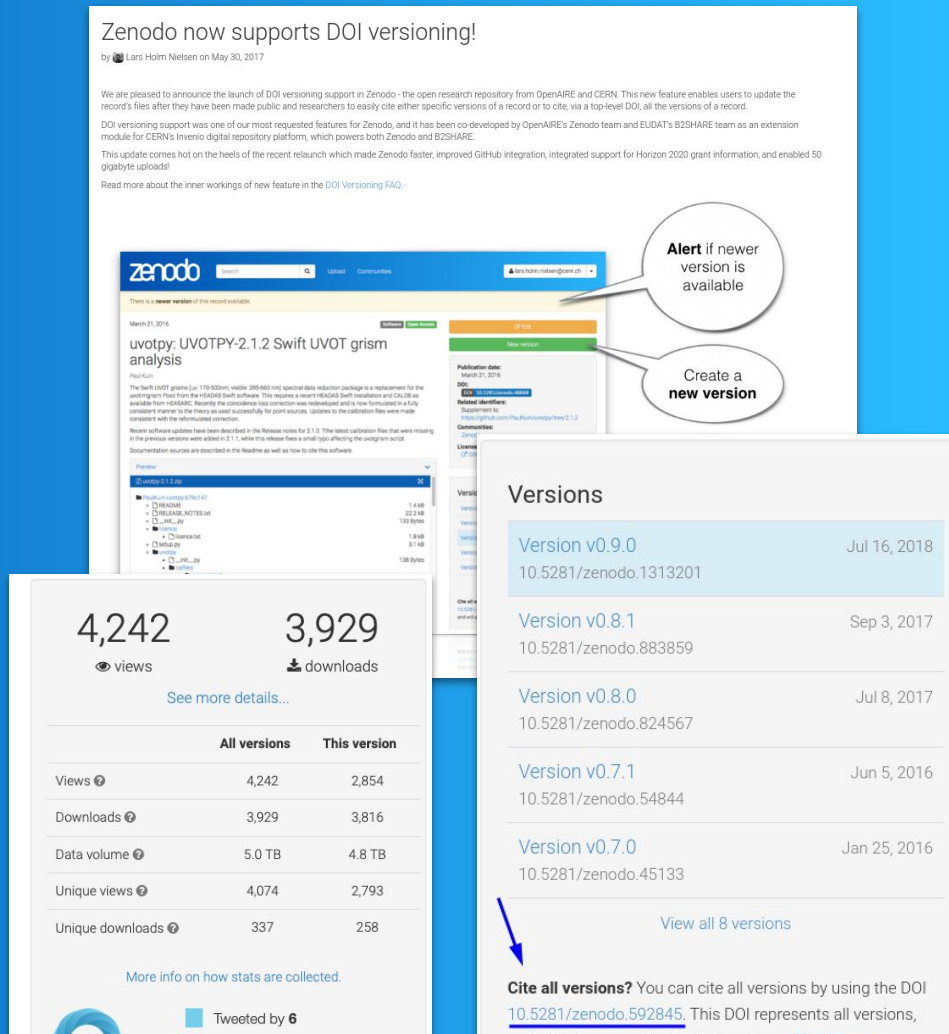
GitHub integration

- Launched in 2016
- ~30k repositories integration
- ~60k releases archived
- “`.zenodo.json`” file for overriding metadata
- Two weeks to implement...
  - ...countless hours of addressing/discussing special use-cases with users



DOI Versioning

- Launched in 2017
- Introduces a Concept DOI
  - Always points to the latest version
  - Has metadata links for all versions
- Automatically done via the GitHub integration
- Usage statistics (views, downloads) tracked individually and across all versions

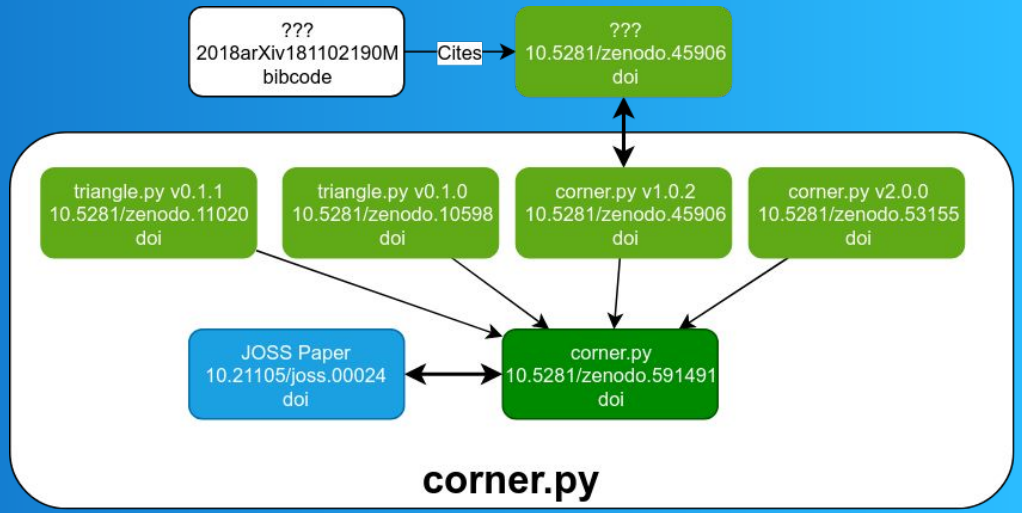


The Asclepias project

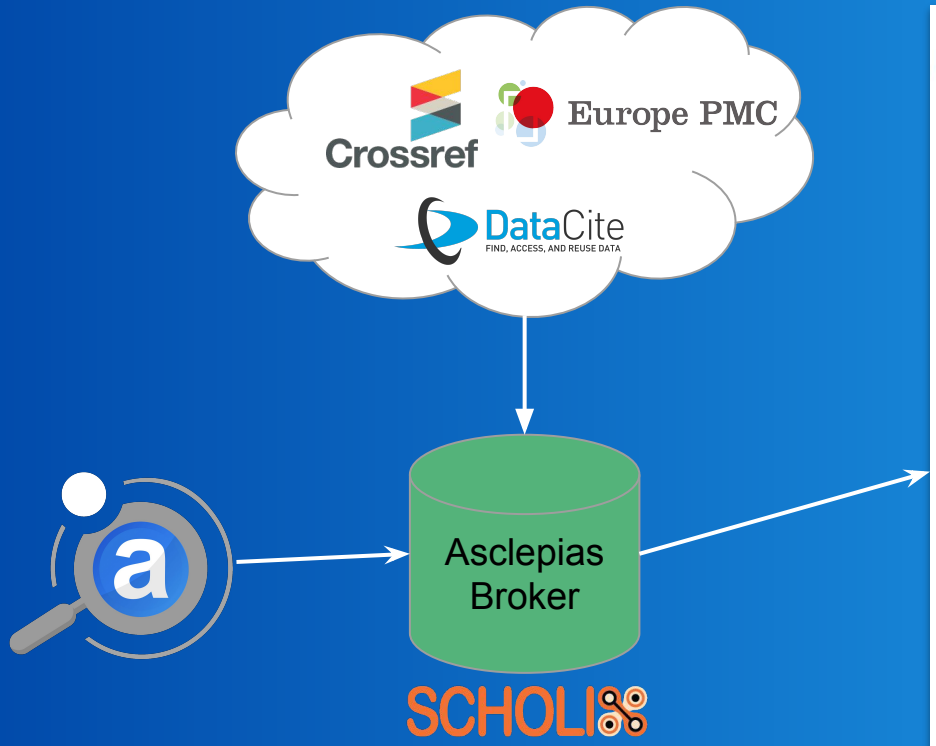
- Funded by the Sloan Foundation, to improve software citation across Astronomy

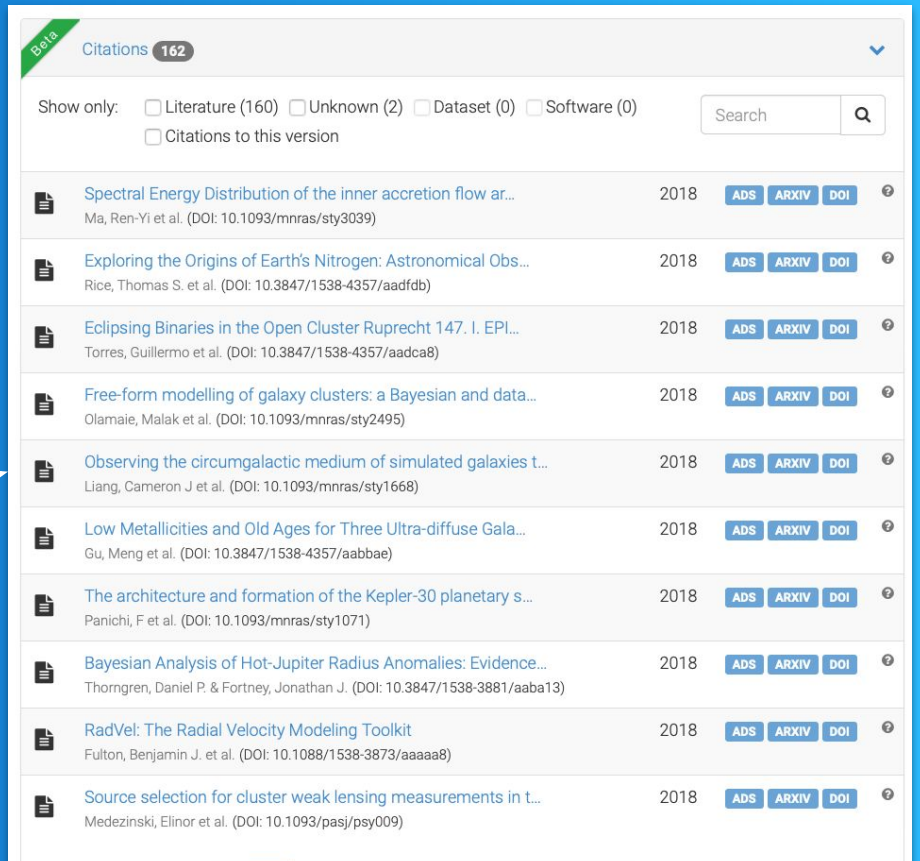
The PID buffet problem

- Triangle.py
  - 10.5281/zenodo.10598
  - 10.5281/zenodo.11020
- Corner.py
  - 10.5281/zenodo.45906
  - 10.5281/zenodo.53155
  - 10.5281/zenodo.591491 (Concept)
- JOSS
  - 10.21105/joss.00024
- ASCL (Astronomy Source Code Library)
  - https://ascl.net/1702.002



The Asclepias citation broker

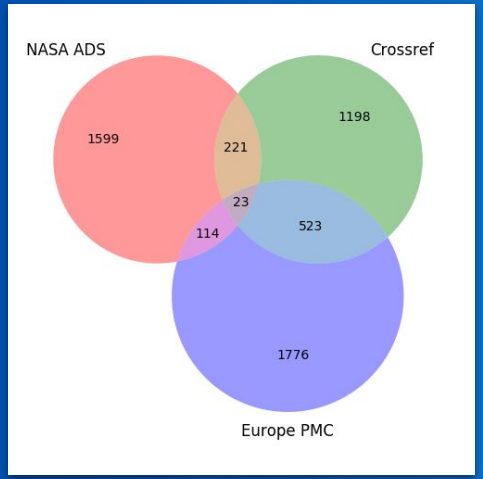


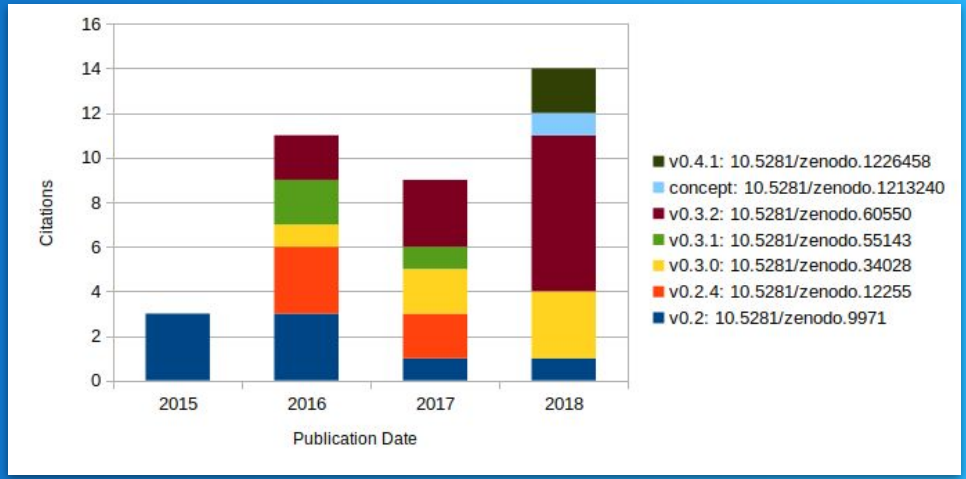


Zenodo software citations analysis

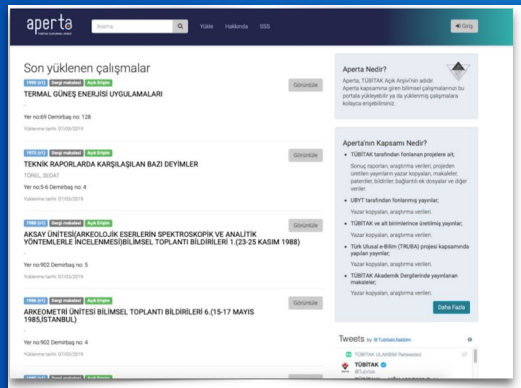
Practice meets Principle: Tracking Software and Data Citations to Zenodo DOIs (arXiv pre-print)

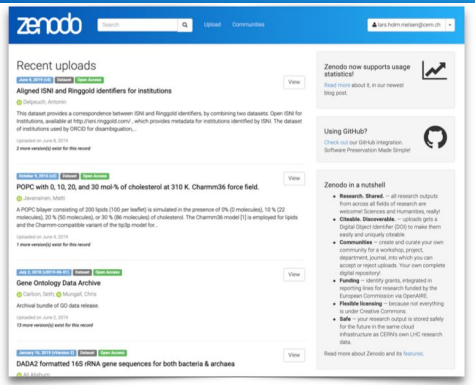
- *How do citation recommendations affect behavior?*
- *3.2% of Zenodo software DOIs have open citations*
- Ideal vs. Practical implementations
- Cross-domain software citation sources

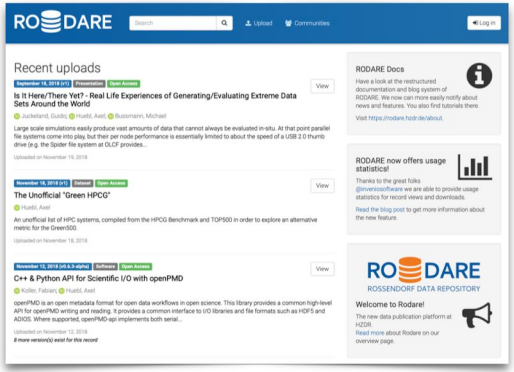


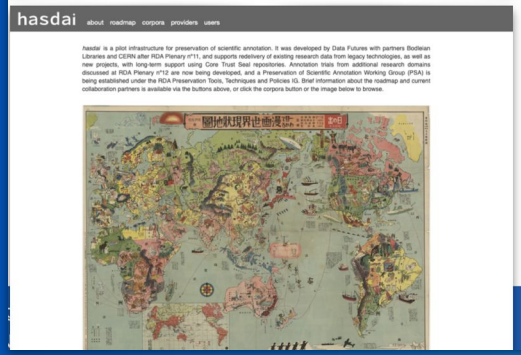


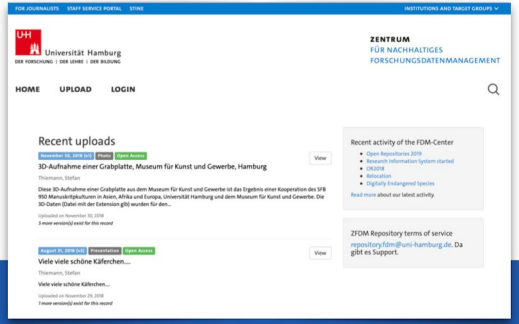
Future plans - Zenodo clones...

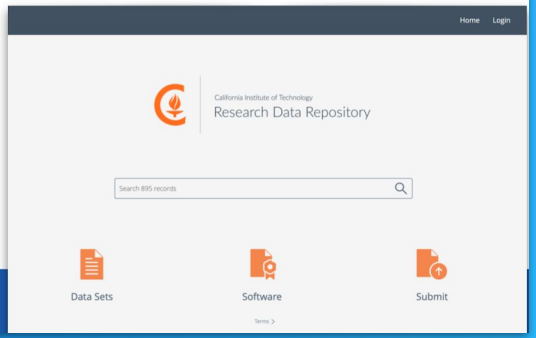










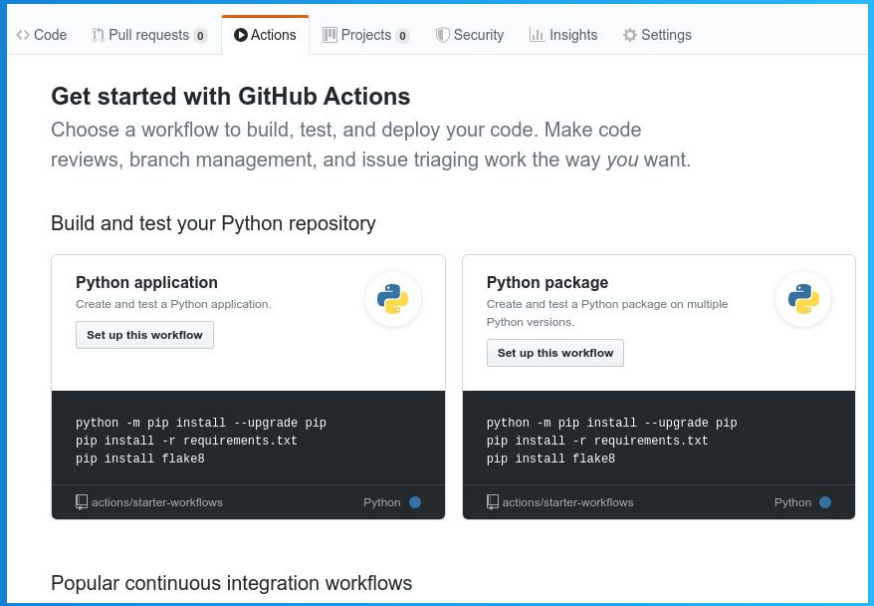


InvenioRDM

- Turn-key RDM solution
- 12+ partners
- Based on Invenio and Zenodo's current featureset
  - DataCite-based metadata schema
  - DOI Versioning
  - GitHub integration

Future plans - GitHub Actions and more

- Zenodo GH integration vs. GitHub Action
  - Better DOI and metadata integration in the repository/code/release
  - More flexibility for managing metadata (e.g. use CodeMeta)
- Uniform software citation recommendation
  - Automatic PRs to README.md with BibTex/CFF



Thank you :)

Questions, comments?