Improving Publication Tracking

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Background

The Program for Climate Model Diagnosis and Intercomparison (PCMDI) needs to keep track of a large number of publications and metadata in order to be able to efficiently search for related publications. The previous web portal provided the minimum level of service needed, but could be improved.

The main goals for improvements were as follows:
- Reduce page load time when displaying large volume search results.
- Provide user accounts and limit editing to a user's own submissions.
- An administration panel to edit any publication.
- Reduce user input required when adding a new publication.

Implementation

In order to reduce the load time when viewing a large set of results, the amount of information being transferred initially needed to be minimized. To do this, the citation and meta data sections are loaded asynchronously, and only once the user has clicked on the corresponding link.

User accounts are handled by the Django Authentication system while registration is enabled through the Django registration package paired with a Google captcha to prevent automated registrations. The native Django Admin interface serves as a tool for curating content easily, without needing machine level access.

The problem of user fatigue when adding a publication was solved by leveraging services that resolve DOIs. Most common fields are filled in automatically by simply entering the DOI of the new article. Since the form expects only full journal names, a Python package is used to compare abbreviated names to a server side list of journals, and the closest match is automatically selected for the user.

Results

The final product is a mobile friendly web site built atop a modern and secure framework. All of the major goals were achieved while maintaining some of the look and feel of the old site. Additionally, it was built to be extendable. CMIP6 and other models can be added by simply copying a text file to the server.

Before ———→ After