

Lenstool developments

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The Lenstool ecosystem



- Redmine wiki <https://projects.lam.fr/projects/lenstool/wiki>
- Gitlab repository <https://git-cral.univ-lyon1.fr/lenstool/lenstool>
- Google group email list <https://groups.google.com/g/lenstool>
- ReadTheDoc <https://lenstool-tutorial.readthedocs.io>
- Slack workspace <https://lenstool.slack.com>
- Strong Lensing Cluster Atlas <https://data.lam.fr/sl-cluster-atlas/home>

Current developers

- Benjamin Beauchesne (Durham): combination lensing / X-rays / ICL / galaxy stellar kinematics (IFU)
- Johan Richard (CRAL): Source reconstruction
- Eric Jullo (LAM): Code maintenance / Multiplane lensing / self interacting fuzzy dark matter soliton profiles
- Joseph Allingham (Sydney): combination lensing / X-rays / hydro
- Anna Niemiec (LPSC): Combination strong & weak lensing => hydrid-Lenstool
- Tomas Verdugo (UNAM): combination lensing / cluster member kinematics



Commit CI/CD & Conda Deployment

- A Gitlab CI/CD pipeline is launched automatically after each commit (NEW!! April 2025)
- Automatic procedure:
 - Create a virtual Ubuntu environment with Python 3.10 and dependencies
 - Compile and install C & Python code
 - Make checks
 - Build [ReadTheDoc](#) documentation located in `./docs`
- Conda deployment recipes are stored in the conda-forge [lenstool-feedstock](#) repository
- A conda-bot checks new Lenstool tags on GitLab and creates a PR that lenstool-feedstock maintainers validate (Eric or Benjamin)

Documentation

- Documentation is compiled after each building job in the ReadTheDoc format
- It is stored on the Gitlab server, and accessible in the [Pages](#) section

The image shows a screenshot of the Lenstool GitLab repository and its documentation page. The repository view on the left includes a sidebar with navigation options like 'Project', 'Issues', 'Merge requests', 'Manage', 'Plan', 'Code', 'Build', 'Secure', 'Deploy', 'Operate', 'Monitor', 'Analyze', and 'Settings'. The main content area displays the 'master' branch of the 'lenstool' repository, showing a commit history table and project information. A red circle highlights the 'GitLab Pages' link in the project information section, with a red arrow pointing to the documentation page on the right. The documentation page features a search bar, a table of contents, and a welcome message.

Repository View (Left):

- Project: Lenstool
- Branch: master
- Commit: 15efac64
- Commit message: Bug fix module name change reader.py => imafire.py
- Commit history table:

Name	Last commit	Last update
autoconf	Add NFW potential e_pot() definition	5 months ago
docs	Remove old documentation files	6 days ago
examples	Better handling of the lens limits. Ne...	2 days ago
examples_table	several changes in test_gnfw.par	16 years ago
include	Merge branch 'master' of https://git-...	4 months ago
lenstool	Bug fix module name change reader....	2 days ago
liblt	Add NFW potential e_pot() definition	5 months ago
perl	Add NFW potential e_pot() definition	5 months ago
src	Allow to optimize a lens model direct...	1 week ago
table_src	Fix a compilation bug issue with gcc ...	5 days ago
tests	Add NFW potential e_pot() definition	5 months ago

Project information (Right):

- 1,424 Commits
- 14 Branches
- 55 Tags
- 566.8 MiB Project Storage
- 1 Environment
- GNU GPLv3
- CHANGELOG
- CI/CD configuration
- GitLab Pages** (highlighted)
- + Add README
- + Add CONTRIBUTING
- + Add Kubernetes cluster
- + Add Wiki
- + Configure Integrations
- Created on: March 31, 2019

Documentation Page (Right):

- Welcome to the Lenstool documentation!
- Search docs
- CONTENTS:

 - Installation of Lenstool
 - Method
 - Tutorial

- SOFTWARE:

 - Parameter file: Section details
 - Input/Output files
 - Supported Potentials

- API:

 - Python wrapper

- Note: Work in progress
- Note: This project is under active development. It is compatible with v8 of `lenstool`.
- Contents:

 - Installation of Lenstool
 - Method
 - Tutorial

Strong Lensing Cluster Atlas

[Home](#)[Search data](#)[Documentation](#)[Tools](#)

Sign In / Register

Welcome to the SL Cluster Atlas database

About SL Cluster Atlas

Welcome to the Strong Lensing Cluster Atlas Data Base at LAM. This project aims at storing galaxy cluster strong lensing mass models and provides mass modelling products to the community. For each galaxy cluster, we provide the full mass modelling material: input and output files for a given reconstruction algorithm, catalogs of multiple images and cluster members and different maps as fits files (shear, convergence ...). A description of the cluster and the contact of the modeller is given in the README file.

We provide documentation and tools that allow users to derive important lensing quantities from the data shared here.



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Currently based on ANIS v3.17.1

[Home](#)[Search data](#)[Documentation](#)[Tools](#)

Sign In / Register

Dataset selection

Search criteria

Output columns

Result table

Request informations

17 rows found in the **Cluster** dataset.

No criteria selected for this search.

Downloads

[All results], of this view

Download result table

JSON

CSV

Result table

name ? ↓	alternative_names ? ↑	link_to_model ? ↑	ra ? ↑	dec ? ↑	redshift ? ↑	image_display ? ↑	pdf_display ? ↑
A2390		Go to model(s)	328.4033974	17.6954389	0.231		
A2667		Go to model(s)	357.91425	-26.084181	0.233		
A2744		Go to model(s)	3.586259	-30.400174	0.308		

The soliton branch

- Example in [./examples/example_soliton](#)
- A soliton is the analytical solution of a scalar field dark matter

$$\rho_{\text{sol}}(r) = \frac{\rho_{0\text{sol}} \sin(r/r_a)}{r/r_a}$$

with the radius

$$r_a^2 = \frac{3\lambda_4}{16\pi G_N m^4}$$

- The outer halo region are NFW profile, with a transition radius r_t

$$M_{\text{sol}}(r_t) = \alpha M_{\text{NFW}}(r_t)$$

- r_a in the range $\sim 10\text{kpc} \Rightarrow m$ in the range $10^{-21} - 10^{-3} \text{ eV}$

