
Webnucleo Documentation

Clemson University

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1.1 Overview

Webnucleo is a Clemson University based project on nuclear astrophysics, astronomy, and cosmochemistry.

1.1.1 Authors

- The webnucleo team.

1.1.2 Contribute

- Issue Tracker: <https://github.com/webnucleo-org/webnucleo/issues/>
- Source Code: <https://github.com/webnucleo-org/webnucleo/>

1.1.3 License

The project is licensed under the GNU Public License v3 (or later).

1.2 Resources

Project resources

1.2.1 Jupyter Notebooks

Here are some notebooks. Here is a nice introduction to [Jupyter Notebooks](#). While you can download and run the notebooks on your local computer, you may find it more convenient to run them on [Google Colaboratory](#). To do so, click on the Open in Colab badge on the given notebook page. This option does require you to have a [Google Account](#).

Nuclear Astrophysics.

Nucleosynthesis

[NRLEE Nucleosynthesis](#). This notebook explores NRLEE nucleosynthesis.

[\(n,gamma\)-\(gamma,n\) equilibrium](#). (n,gamma)-(gamma,n) equilibrium is an important phase of r-process nucleosynthesis. This notebook studies that phase in some detail.

[ww95](#). This notebook explores the Woosley and Weaver (1995) stellar yields from massive stars.

Stellar Structure

[Lane Emden Equation](#). This notebook explores solutions to the Lane-Emden equation and applications to physical polytropes.

Webnucleo XML

[Create nuclide XML](#). This notebook allows users to create webnucleo nuclear data XML from their own data.

[Create reaction XML](#). This notebook allows users to create webnucleo reaction data XML from their own data.

[Plot reaction XML](#). This notebook allows users to plot webnucleo XML reaction data.

1.2.2 Docker Images.

Here are some Docker images.

[libnucnet examples](#). This docker image allows users to download [libnucnet](#) data and run the example codes.

1.2.3 Codes.

Here are some Codes:

[wnutils](#). This python package allows the user to read, graph, and animate [libnucnet](#) input and output from Webnucleo codes.