

ENDF/B-VIII.0 β 1 Thermal Kernels

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ENDF/B-VIII.0β1

- A “beta” release is now available for testing candidate ENDF/B-VIII.0 evaluations
- <https://ndclx4.bnl.gov/gf/project/endlf/>



The screenshot shows a web browser window displaying the GForge project page for ENDF/B-VIII.0β1. The browser address bar shows the URL <https://ndclx4.bnl.gov/gf/project/endlf/>. The page features a large green logo for ENDF/B-VIII.0β1. Below the logo, the text reads "ENDF/B-VIII" and "US Library of Evaluated Nuclear Reaction Data". A navigation menu on the left includes options like Summary, Reporting, Search, Message Wall, Sprints (0), Tracker (8), Docs (6), Blog (1), Releases (3), Lists (2), Wiki (20), and SVN. A central announcement states "ENDF/B-VIII.beta1 Released!" with a post date of 2016-04-25 by David Brown. It provides two download URLs: <https://ndclx4.bnl.gov/gf/project/endlf/scmsvn/?action=browse&path=%2Ftags%2FENDF-B-VIII.beta1%2F> for the svn repo and <https://ndclx4.bnl.gov/gf/project/endlf/frs/> for the tarballs. A right sidebar contains an activity graph, a description of ENDF as a collaboration environment, a project rating of five stars, a disk quota of 2239.25 MB of 20 MB used, and a list of developers including Allan Carlson, Michael Dunn, Roberto Capote, and Edward Lent. The Trove Categorization section lists: Development Status: 5 - Production/Stable, Intended Audience: End Users/Desktop, License: Public Domain, Natural Language: English, Operating System: Linux, Programming Language: PHP, and Topic: Nuclear Data.

ENDF/B-VIII.0β1

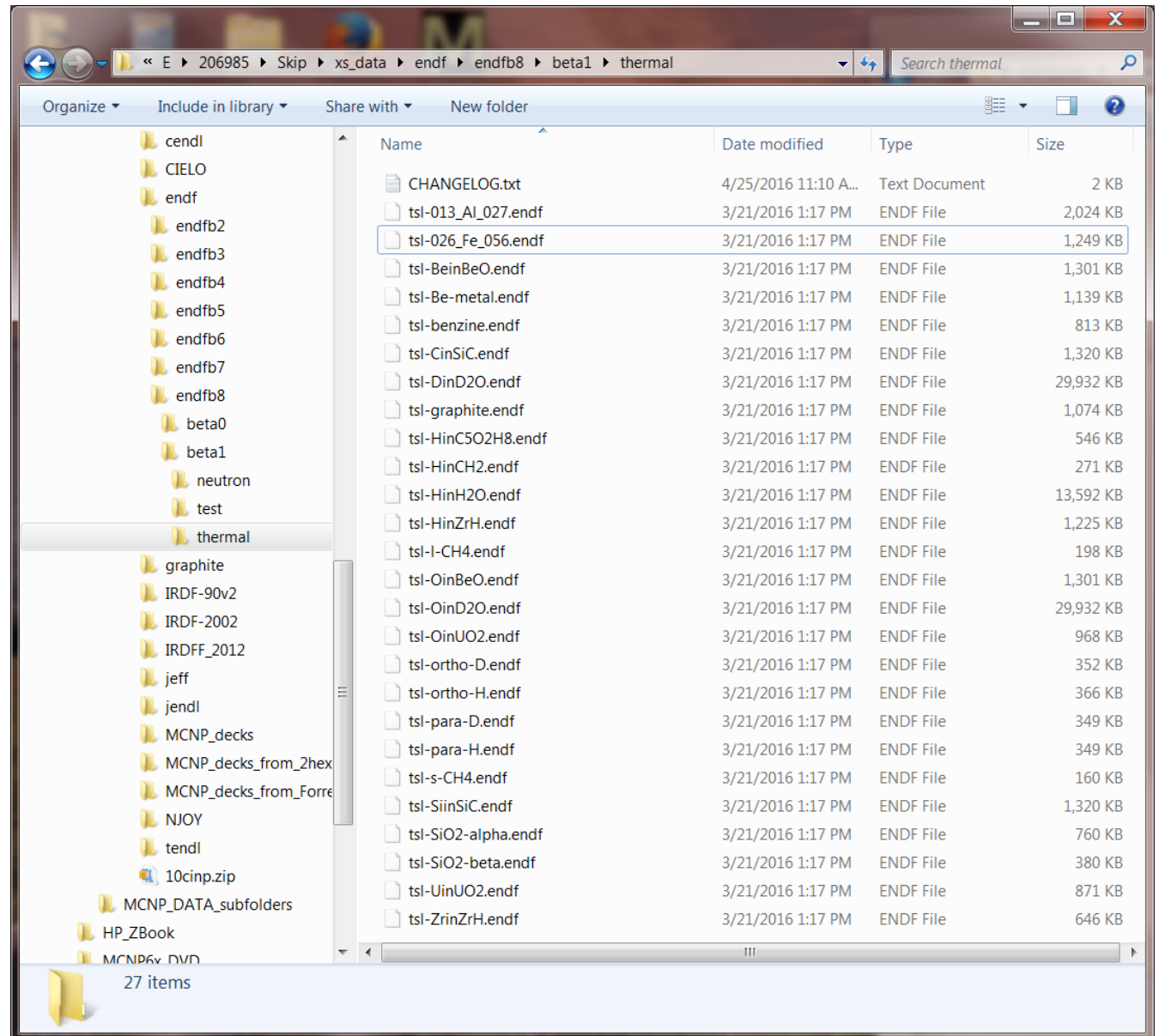
- Click on the “tarball” link and you go to ...
- <https://ndclx4.bnl.gov/gf/project/endl/frs/>
- Thermal kernels are found in “ENDF-B-VIII.beta1-thermal_scatt.gz.tar”

The screenshot shows the FORGE Advanced Server interface for the ENDF/B-VIII.0 project. The page displays a table of releases for ENDF/B-VIII.0, with the latest release being beta1. The table lists various tarball files, their maturity levels, file sizes, and download counts. The FORGE logo and 'Advanced Server' text are visible at the bottom of the page.

Package Name	Latest Release	Maturity	Files	FileSize	Downloads	Changelog
ENDF/B-VIII.0	beta1	4 - Beta	ENDF-B-VIII.beta1-deuterons.tar.gz	80.96 KB	1	Get changelog
		4 - Beta	ENDF-B-VIII.beta1-photoat.tar.gz	7.16 MB	2	Get changelog
		4 - Beta	ENDF-B-VIII.beta1-nfy.tar.gz	1.44 MB	1	Get changelog
		4 - Beta	ENDF-B-VIII.beta1-thermal_scatt.tar.gz	20.31 MB	7	Get changelog
		4 - Beta	ENDF-B-VIII.beta1-neutrons.tar.gz	251.2 MB	7	Get changelog
		4 - Beta	ENDF-B-VIII.beta1-standards.tar.gz	201.78 KB	1	Get changelog
		4 - Beta	ENDF-B-VIII.beta1-electrons.tar.gz	6.59 MB	1	Get changelog
		4 - Beta	ENDF-B-VIII.beta1-sfv.tar.gz	257.89 KB	1	Get changelog
		4 - Beta	ENDF-B-VIII.beta1-atomic_relax.tar.gz	1.34 MB	0	Get changelog
		4 - Beta	ENDF-B-VIII.beta1-helium3s.tar.gz	102.44 KB	0	Get changelog
		4 - Beta	ENDF-B-VIII.beta1-qammas.tar.gz	49.68 MB	2	Get changelog
		4 - Beta	ENDF-B-VIII.beta1-tritons.tar.gz	129.82 KB	0	Get changelog
		4 - Beta	ENDF-B-VIII.beta1-decay.tar.gz	10.11 MB	2	Get changelog
		4 - Beta	ENDF-B-VIII.beta1-protons.tar.gz	11.89 MB	0	Get changelog
ENDF-B-VII.1	Final	5 - Production/Stable	ENDF-B-VII.1-releaseNotes.tar.gz	1.75 MB	639	Get changelog
		5 - Production/Stable	ENDF-B-VII.1.tar.gz	325.82 MB	6634	Get changelog

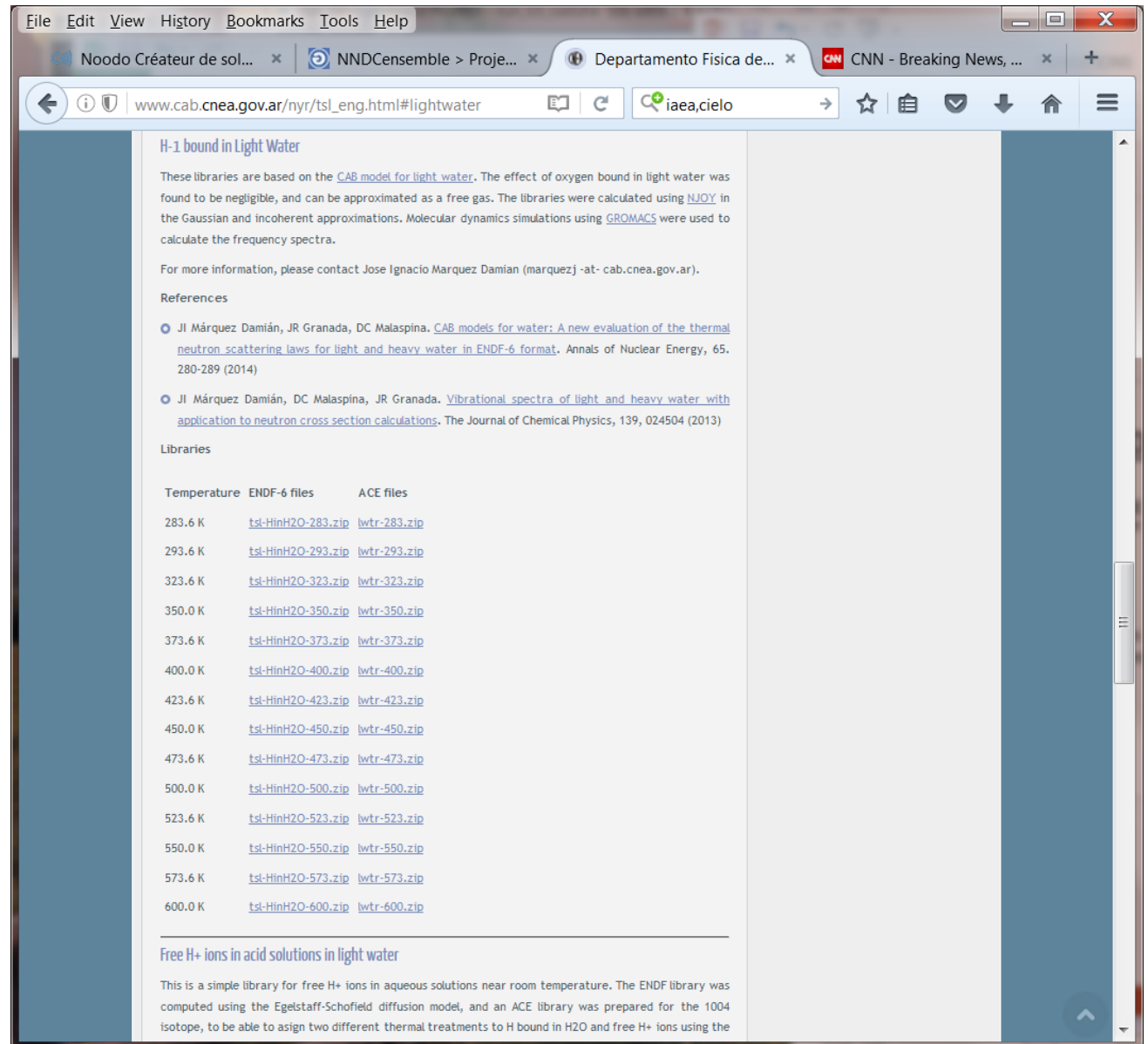
ENDF/B-VIII.0β1

- After downloading and unpacking the following tsl files are available ...
- Most tsl files are carried over from e71, or come from our JEFF colleagues, but new files include ...
 - tsl-HinH2O.endf
 - tsl-DinD2O.endf



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- Light and heavy water files were generated by J.I.Márquez Damián *et al.*
- ENDF-6 formatted, and ACE, files are available at http://www.cab.cnea.gov.ar/nyr/tsl_eng.html#lightwater



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www.cab.cnea.gov.ar/nyr/tsl_eng.html#lightwater

iaea,cielo

H-1 bound in Light Water

These libraries are based on the [CAB model for light water](#). The effect of oxygen bound in light water was found to be negligible, and can be approximated as a free gas. The libraries were calculated using [NJOY](#) in the Gaussian and incoherent approximations. Molecular dynamics simulations using [GROMACS](#) were used to calculate the frequency spectra.

For more information, please contact Jose Ignacio Marquez Damian (marquezj-at-cab.cnea.gov.ar).

References

- JI Márquez Damián, JR Granada, DC Malaspina. [CAB models for water: A new evaluation of the thermal neutron scattering laws for light and heavy water in ENDF-6 format](#). Annals of Nuclear Energy, 65, 280-289 (2014)
- JI Márquez Damián, DC Malaspina, JR Granada. [Vibrational spectra of light and heavy water with application to neutron cross section calculations](#). The Journal of Chemical Physics, 139, 024504 (2013)

Libraries

Temperature	ENDF-6 files	ACE files
283.6 K	tsl-HinH2O-283.zip	lwtr-283.zip
293.6 K	tsl-HinH2O-293.zip	lwtr-293.zip
323.6 K	tsl-HinH2O-323.zip	lwtr-323.zip
350.0 K	tsl-HinH2O-350.zip	lwtr-350.zip
373.6 K	tsl-HinH2O-373.zip	lwtr-373.zip
400.0 K	tsl-HinH2O-400.zip	lwtr-400.zip
423.6 K	tsl-HinH2O-423.zip	lwtr-423.zip
450.0 K	tsl-HinH2O-450.zip	lwtr-450.zip
473.6 K	tsl-HinH2O-473.zip	lwtr-473.zip
500.0 K	tsl-HinH2O-500.zip	lwtr-500.zip
523.6 K	tsl-HinH2O-523.zip	lwtr-523.zip
550.0 K	tsl-HinH2O-550.zip	lwtr-550.zip
573.6 K	tsl-HinH2O-573.zip	lwtr-573.zip
600.0 K	tsl-HinH2O-600.zip	lwtr-600.zip

Free H+ ions in acid solutions in light water

This is a simple library for free H+ ions in aqueous solutions near room temperature. The ENDF library was computed using the Egelstaff-Schofield diffusion model, and an ACE library was prepared for the 1004 isotope, to be able to assign two different thermal treatments to H bound in H2O and free H+ ions using the

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- Light and heavy water files were generated by J.I.Márquez Damián *et al.*
- ENDF-6 formatted, and ACE, files are available at http://www.cab.cnea.gov.ar/nyr/tsl_eng.html#lightwater

The screenshot shows a web browser window with the URL www.cab.cnea.gov.ar/nyr/tsl_eng.html#lightwater. The page title is "H-2 and O-16 bound in Heavy Water". The content includes a description of the libraries, a list of references, and a table of libraries.

H-2 and O-16 bound in Heavy Water

These libraries are based on the [CAB model for heavy water](#). The libraries were calculated using [NJOY](#) in the Gaussian and Sköid approximations. Molecular dynamics simulations using [GROMACS](#) were used to calculate the frequency spectra and the partial structure factors.

These files correspond to rev. 01 of the library. The original files can be downloaded [here](#).

For more information, please contact Jose Ignacio Marquez Damian (marquezj -at- cab.cnea.gov.ar).

References

- JI Márquez Damián, JR Granada, D Roubtsov. [Improvement on the calculation of D2O moderated critical systems with new thermal neutron scattering libraries](#). Annals of Nuclear Energy, 71. 206-210 (2014)
- JI Márquez Damián, JR Granada, DC Malaspina. [CAB models for water: A new evaluation of the thermal neutron scattering laws for light and heavy water in ENDF-6 format](#). Annals of Nuclear Energy, 65. 280-289 (2014)

Libraries

Temperature	ENDF-6 files	ACE files
283.6 K	tsl-DinD2O-283.zip , tsl-OinD2O-283.zip	hwtr-283.zip , owtr-283.zip
293.6 K	tsl-DinD2O-293.zip , tsl-OinD2O-293.zip	hwtr-293.zip , owtr-293.zip
323.6 K	tsl-DinD2O-323.zip , tsl-OinD2O-323.zip	hwtr-323.zip , owtr-323.zip
350.0 K	tsl-DinD2O-350.zip , tsl-OinD2O-350.zip	hwtr-350.zip , owtr-350.zip
373.6 K	tsl-DinD2O-373.zip , tsl-OinD2O-373.zip	hwtr-373.zip , owtr-373.zip
400.0 K	tsl-DinD2O-400.zip , tsl-OinD2O-400.zip	hwtr-400.zip , owtr-400.zip
423.6 K	tsl-DinD2O-423.zip , tsl-OinD2O-423.zip	hwtr-423.zip , owtr-423.zip
450.0 K	tsl-DinD2O-450.zip , tsl-OinD2O-450.zip	hwtr-450.zip , owtr-450.zip
473.6 K	tsl-DinD2O-473.zip , tsl-OinD2O-473.zip	hwtr-473.zip , owtr-473.zip
500.0 K	tsl-DinD2O-500.zip , tsl-OinD2O-500.zip	hwtr-500.zip , owtr-500.zip
523.6 K	tsl-DinD2O-523.zip , tsl-OinD2O-523.zip	hwtr-523.zip , owtr-523.zip
550.0 K	tsl-DinD2O-550.zip , tsl-OinD2O-550.zip	hwtr-550.zip , owtr-550.zip
573.6 K	tsl-DinD2O-573.zip , tsl-OinD2O-573.zip	hwtr-573.zip , owtr-573.zip
600.0 K	tsl-DinD2O-600.zip , tsl-OinD2O-600.zip	hwtr-600.zip , owtr-600.zip

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