

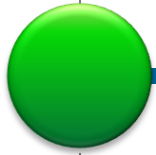
1) JEFF-4T3 status



JEFF-4.0 Timeline



2017



JEFF-3.3
Release

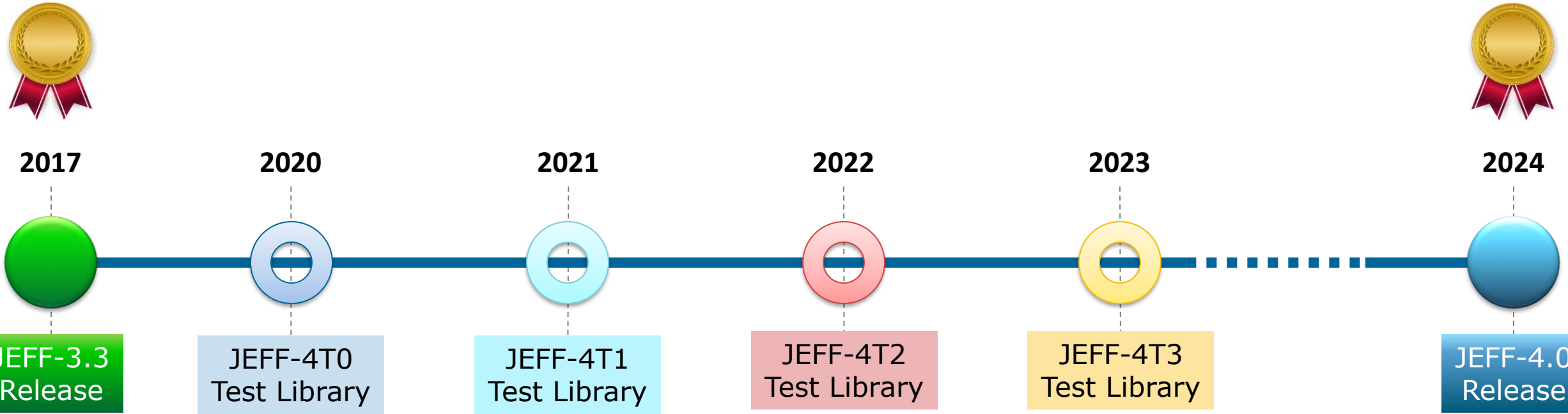


2024



JEFF-4.0
Release

JEFF-4.0 Test versions



Thermal neutron induced fission of U-235 and Pu-239

At each step of the evaluation process, correlations induced mainly by the conservation laws are given and the full variance-covariance matrix can then be determined

As data points from the experimental datasets were not always compatible with each other, it was necessary to apply a “regularization” method

Conservative sorting (C)

All the datasets are used by adding 2.5% uncertainty to all data points, in order to make them compatible.

Strict sorting (S)

Instead of adding independent uncertainty, only consistent experiments are selected. Measurements that did not pass the tests per datasets and the tests per mass were excluded.

The main difference between the two methods is the uncertainty

Thermal neutron induced fission of U-235 and Pu-239

At each step of the evaluation process, correlations induced mainly by the conservation laws are given and the full value is used.

It was decided to adopt the conservative approach

As data points from the experimental datasets were not always compatible with each other, it was necessary to apply a “regularization” method

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All the datasets are used by adding 2.5% uncertainty to all data points, in order to make them compatible.

Strict sorting (S)

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The main difference between the two methods is the uncertainty

JEFF-4.0 Fission Yields

Charles Wemple (Studsvik): identified a small normalization issue.

Fissioning System	Energy [eV]	All FPs	Ternary FPs (Z<22)	Remaining FPs
U-235 Strict	2.5300E-02	2.0022736112300E+00	1.8775140000400E-03	2.0003960972300E+00
U-235 Strict	4.0000E+05	2.0018429755493E+00	1.8431092000000E-03	1.9999998663493E+00
U-235 Strict	1.4000E+07	2.0018770898726E+00	1.8756382281893E-03	2.0000014516444E+00
U-235 Conservative	2.5300E-02	2.0022734828531E+00	1.8775140000400E-03	2.0003959688531E+00
U-235 Conservative	4.0000E+05	2.0023782236639E+00	2.3772294773225E-03	2.0000009941866E+00
U-235 Conservative	1.4000E+07	2.0132017746419E+00	2.4470890025911E-03	2.0107546856393E+00
Pu-239 Strict	4.0000E+05	2.0023782236639E+00	2.3772294773225E-03	2.0000009941866E+00
Pu-239 Conservative	2.5300E-02	2.0132017746419E+00	2.4470890025911E-03	2.0107546856393E+00
Pu-239 Conservative	4.0000E+05	2.0023782236639E+00	2.3772294773225E-03	2.0000009941866E+00

Charles Wemple (Studsvik) identified a small normalization issue, that has been solved but new files are not on the website yet! They will be replaced for the release of T3

INDEN files

- **9-F-19** (f19e80_zt9_ENDF): Based on ENDF/B-VIII with gamma emission data. Inelastic replaced by Morgan data below 1.4 MeV, AD from Elwyn-EXFOR 11441, F-19(n,2n) from IRDFF-II
- **14-Si-28,29,30** (ORNL+IAEA): including the background contribution due to direct capture in the RRR
- **26-Fe-56** (fe56e80X29r67b): fe56e80X29r67 + MT103 and covariances. It also includes the Cr-53 production cross section in MF10

INDEN - International Nuclear Data Evaluation Network

Network managed by the International Atomic Energy Agency

Coordinators: [R. Capote](#), [P. Dimitriou](#), and [G. Schnabel](#)

Recap of all INDEN files

- 5-B-10,11
- 8-O-18
- 9-F-19
- 14-Si-28,29,30
- 24-Cr-50,52,53,54
- 25-Mn-55
- 26-Fe-54,56,57
- 29-Cu-63,65



All except:

- 8-O-16
- 57-La-139
- 92-U-233,235,238
- 94-Pu-239,240,241

INDEN - International Nuclear Data Evaluation Network

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Coordinators: [R. Capote](#), [P. Dimitriou](#), and [G. Schnabel](#)

Completion of gamma cascade

- **11-Na-24**
- **12-Mg-26,27**
- **13-Al-26,27**
- **15-P-31,32**
- **16-S-32,33,34,35**
- **18-Ar-38**
- **33-As-73**
- **34-Se-77**
- **44-Ru-100**
- **53-I-131**
- **55-Cs-134**
- **56-Ba-132**
- **61-Pm-149,151**
- **62-Sm-150,151**
- **63-Eu-152,155**
- **64-Gd-152,153,154**
- **66-Dy-160,162,165**
- **68-Er-168**
- **76-Os-189**
- **80-Hg-200**
- **88-Ra-223,225**
- **90-Th-229**
- **93-Np-237**

Cédric Jouanne: Completion of gamma decay cascade for inelastic scattering (MF12 and MF14)

Updates

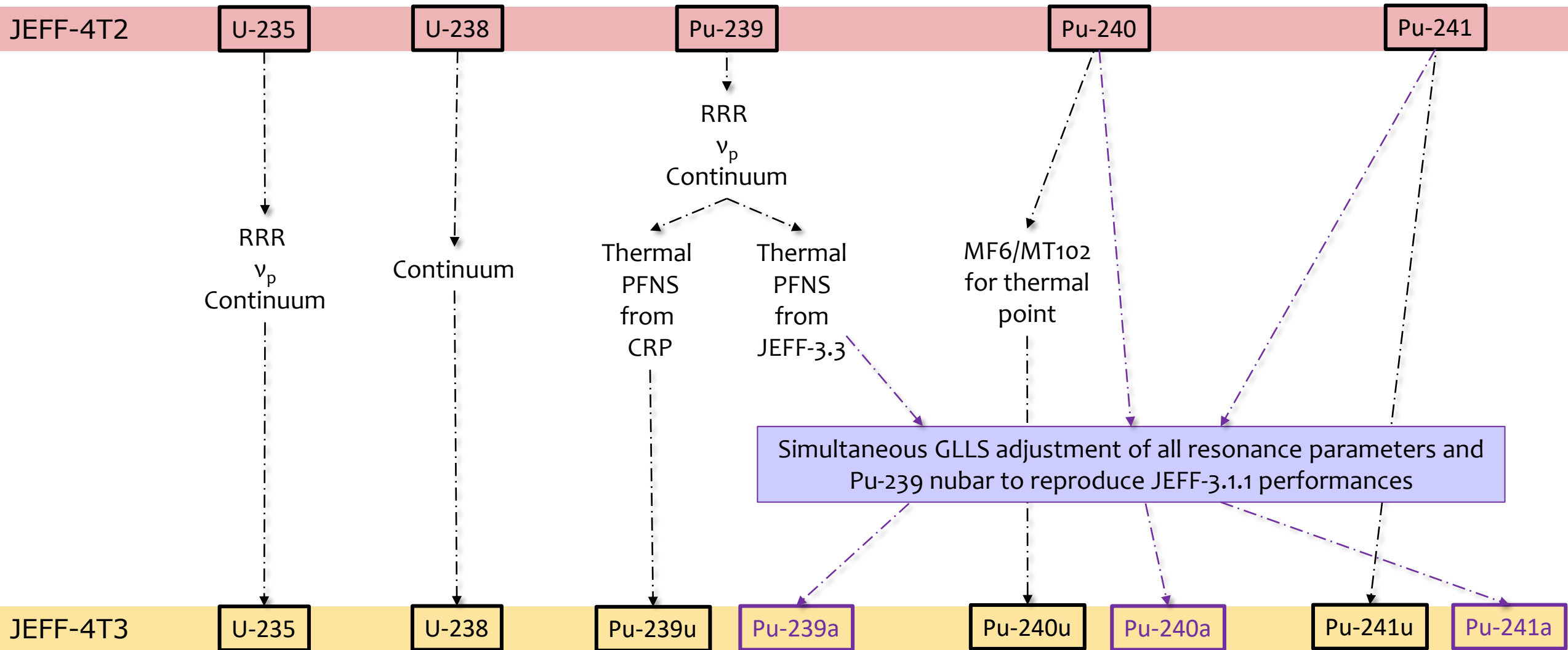


- **8-O-18** (Tim Ware): normalize the distributions in MF=5 for MT=9,16,17,22,28,33
 - **18-Ar-36,38** (Dimitri Rochman, future TENDL-2023): it contains a new RRR part which agrees better with natAr(n, tot)
 - **45-Rh-105** (Gilles Noguère): New correction resonance parameters (MF2/MT151)
 - **90-Th-227**
 - **90-Th-229**
 - **94-Pu-242**
 - **95-Am-242m**
 - **95-Am-243**
 - **98-Cf-251**
- Restore 8-groups delayed neutron fraction

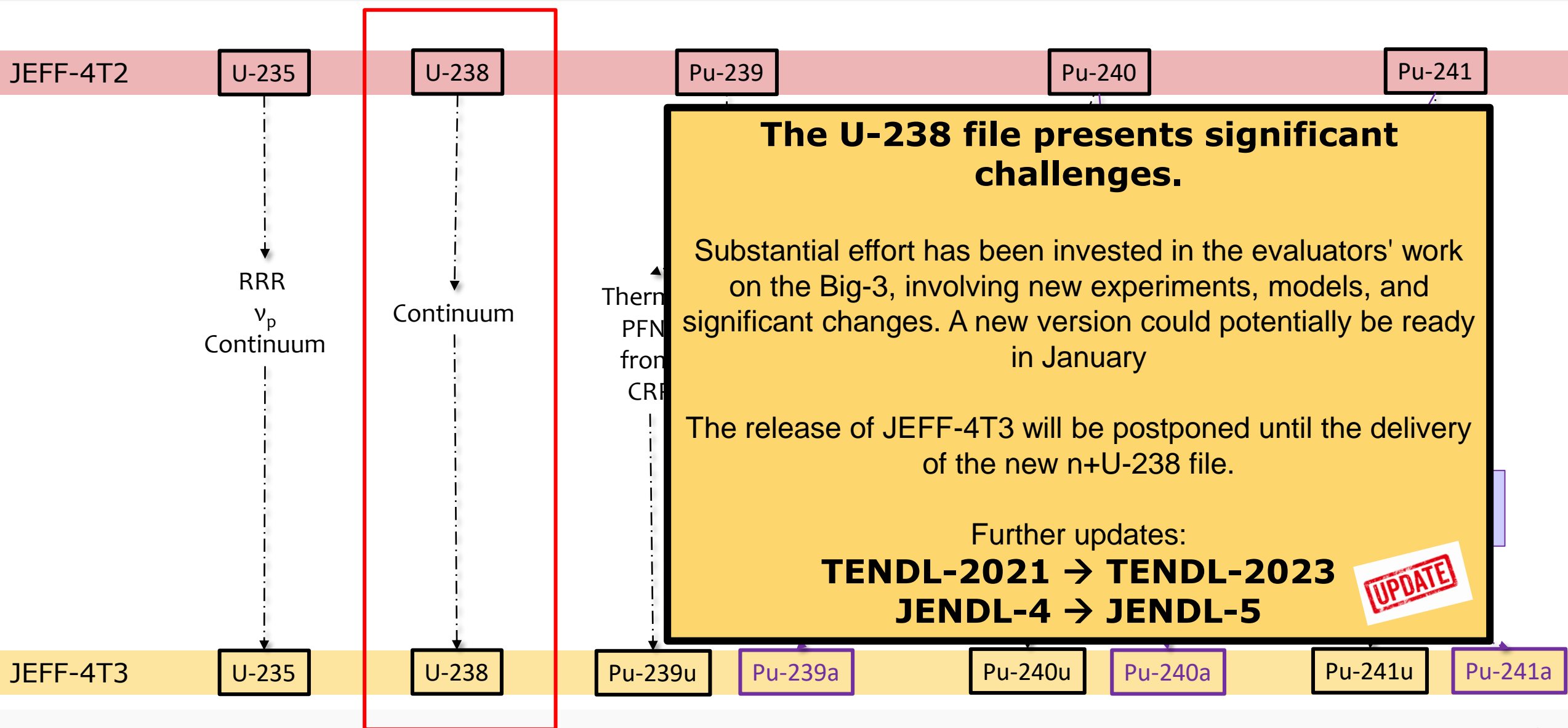
New evaluations

- **23-V-51** (DR, AK, SVDM): new evaluation that solves the problem of hmf25
- **54-Xe-124,126,128,129,130,131,132,134,136** (GN): New RRR file (MF=2, MT=151) using JRC-Geel data
- **61-Pm-147** (DB): New MF9/MT102 including more fluctuations vs incident-energy for this parameter. To account for these fluctuations (even for the JEFF-4T2 file) in current transport/cycle codes where a unique value is often requested, the averaged isomeric ratios must be obtained by folding MF9/MT102 by MF3/MT102 reaction rates.
- **83-Bi-209** (AS): file based on JENDL-5, with modified (n,a) cross section (sections MF3/MT107 and MF3/MT=800-849) adjusted to TENDL-2021 (see JEFDOC-2171). It also contains more complete covariance information than JEFF-3.3/JEFF-4T2. Finally, the neutron capture branching ratio of JENDL-5 results in higher ²¹⁰Po production than JEFF-3.3 which is advantageous from safety point of view.
- **92-U-236** (OB): Include the suggested revision of the fission continuum xs between 4 keV up to 2MeV. Caveat: Present MF33 contains covariance data from JENDL4 and is not updated following the revision of the RRR. This section file should be superseded by an updated covariance calculation. This task is ongoing
- **93-Np-238** (DR): Future TENDL-2023 with updated RRR, following the recommendations from Erwin from SCK
- **TSL HinH2O** (JIMD)
- **TSL HinCH2** (KR)
- **TSL HinC5O2H8** (KR)

Major Actinides



Major Actinides



2) Integrated, Automated, and Reproducible Nuclear Data Processing at the NEA



The NEA Processing pipeline

Upload ENDF-6 file

🕒 8 jobs for [JEFF-4T2.2](#) in 23 minutes and 59 seconds (queued for 2 seconds)

📄 latest

🔗 [cd0e8c84](#) 📄

🔗 No related merge requests found.

Pipeline Needs Jobs **8** Tests **0**

Group jobs by

verification_for...	basic_processing	create_ace	create_other_for...	recap
<input checked="" type="checkbox"/> CHECKR <input type="button" value="↻"/>	<input checked="" type="checkbox"/> FUDGE <input type="button" value="↻"/>	<input checked="" type="checkbox"/> NJOY_ace <input type="button" value="↻"/>	<input checked="" type="checkbox"/> OPENMC <input type="button" value="↻"/>	<input checked="" type="checkbox"/> collect_artifacts <input type="button" value="↻"/>
<input checked="" type="checkbox"/> FIZCON <input type="button" value="↻"/>	<input checked="" type="checkbox"/> NJOY_basics <input type="button" value="↻"/>			
<input checked="" type="checkbox"/> PSYCHE <input type="button" value="↻"/>	<input checked="" type="checkbox"/> PREPRO <input type="button" value="↻"/>			

The main YAML (pipeline definition) is maintained in its own repository

After every commit, the pipeline is automatically triggered

The pipeline is identical for all isotopes

Codes are built into Docker images, stored in the Harbor, and pulled by the pipeline



The NEA Processing pipeline

- Format checks
- Internal consistency checks
- Additional checks

- ENDF → GNDS

- Reconstruction of cross sections from RP
- Creation of PENDF on a unionized energy grid
- Doppler-broadening of the cross sections in PENDF
- Self-shielding in the URR
- Generation of heat production XS and radiation damage energy production



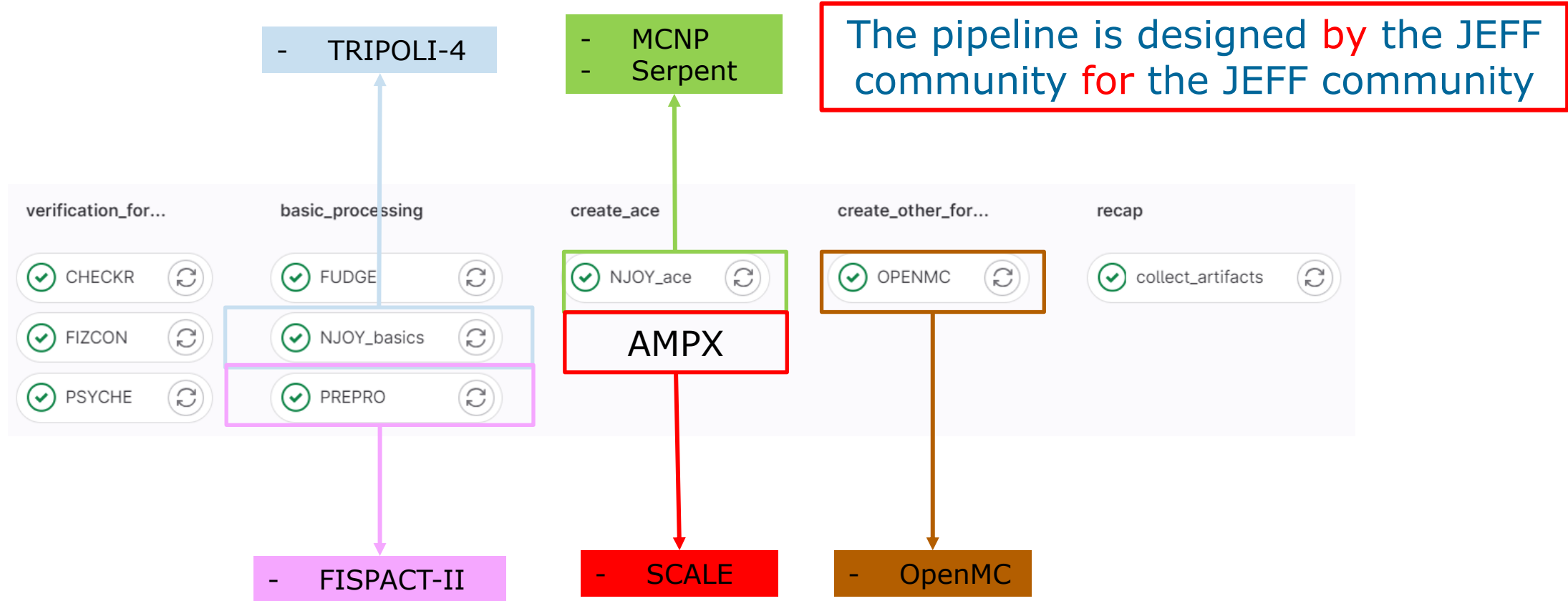
- Produce probability tables for the URR self-shielded XS
- Create the ACE file

- Reconstruction of cross sections from RP
- Doppler-broadening of the cross sections in ENDF-6
- Generation of activation cross sections (MF=10)
- Calculation of self-shielded, multigroup cross sections and multi-band parameters in the ENDF format

- Convert the ACE files into HDF5 format

Thanks to J-C Sublet for providing his processing routine

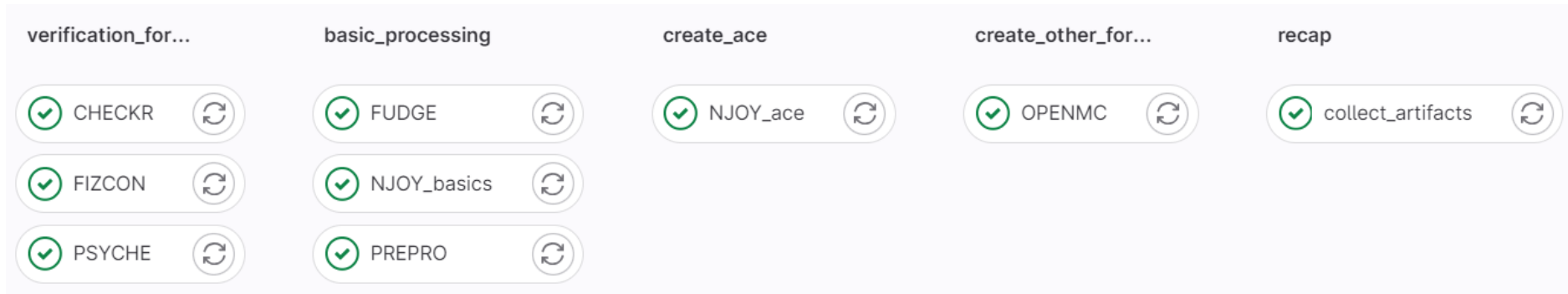
The NEA Processing pipeline



For further information about AMPX processing, contact andrew.holcomb@oecd-nea.org

The NEA Processing pipeline

The NEA Pipeline was used to process JEFF-4T2










did not include scripts to process Thermal Scattering Data.





The TSL processing has been recently added




TSL Repository

Data Bank > [...](#) > Isotopes > tsLH_H2O






 **tsLH_H2O** 
Project ID: 1133 




   Star 0  Fork 0




 4 Commits  1 Branch  0 Tags  641.6 MB Project Storage

 Upload ENDF-6 file  da1530ba 
FOLIGNO Daniela, NEA/DB authored 2 weeks ago

JEFF ▾ tsLH_H2O / + ▾ Find file Web IDE ↓ ▾ Clone ▾



 README  CI/CD configuration  Add LICENSE  Add CHANGELOG  Add CONTRIBUTING

 Add Kubernetes cluster  Add Wiki  Configure Integrations


Name	Last commit	Last update
 .gitlab-ci.yml	Upload YAML file	2 weeks ago
 README.md	Upload README.md	2 weeks ago
 tsLH_H2O.txt	Upload ENDF-6 file	2 weeks ago

TSL pipeline

```
rules:  
- if: '$ISOTOPE =~ /tsl/i' # The job only runs if the isotope filename DOES contain "tsl" in the name
```


 Pipeline #9075 triggered 2 weeks ago by  FOLIGNO Daniela, NEA/DB

Upload ENDF-6 file

 4 jobs for [JEFF](#) in 77 minutes and 16 seconds (queued for 36 seconds)

 [latest](#)



 [da1530ba](#) 


 No related merge requests found.

Pipeline Needs Jobs **4** Tests **0**



verification_fo...

 checkr 

 fizcon 

 psyche 

basic_processing

 NJOY_for_TSL 

TSL pipeline

Data Bank > ... > Isotopes > tsLH_H2O > Jobs > #33695

passed Job NJOY_for_TSL triggered 2 weeks ago by  FOLIGNO Daniela, NEA/DB

```
Search job log [Q] [?] [📄] [↑] [↓]

1 Running with gitlab-runner 11.2.0 (11.2.0)
2   on Databank_ubuntu_20.04_generic zEpMj8f6
3 Using Docker executor with image registry.oecd-nea.org/nds/njoy2016:v71_ubuntu-20 ...
4 Pulling docker image registry.oecd-nea.org/infra/docker-registry/gitlab-runner-helper:11.2.0 ...
5 Using docker image sha256:ff853cacff1d70ab6fae1cc8c495d8d79b7b9cb1dbbe8b2592c77e7161a38c for registry.oecd-nea.org/infra/docker-registry/gitlab-runner-helper:11.2.0 ...
6 Pulling docker image registry.oecd-nea.org/nds/njoy2016:v71_ubuntu-20 ...
7 Using docker image sha256:5dc6f46343f53473c0aba1a63daccf5beecf129a03e24f869886c9801fb94d4 for registry.oecd-nea.org/nds/njoy2016:v71_ubuntu-20 ...
8 Running on runner-zEpMj8f6-project-1133-concurrent-1 via runndslin01... 00:02
9
10 Cloning repository for JEFF with git depth set to 10... 00:04
11 Cloning into '/builds/databank/nds/jeff/evaluations/isotopes/tsL_H_H20'...
12 Checking out da1530ba as JEFF...
13 Skipping Git submodules setup
14
15
16
17 $ git clone --branch add_tsl http://gitlab-ci-token:${CI_JOB_TOKEN}@git.oecd-nea.org/databank/nds/jeff/evaluations/processing-pipeline 01:14:49
18 Cloning into 'processing-pipeline'...
19 warning: redirecting to http://git.oecd-nea.org/databank/nds/jeff/evaluations/processing-pipeline.git/
20 $ export PYTHONPATH='./processing-pipeline/scripts'
21 $ export PATH_TSL_TABLE=processing-pipeline/TSL_parameters.csv
22 $ export ISOTOPE
23 $ export ASSOCIATED_ISOTOPE=`python3 -c "import functions_njoy; functions_njoy.get_associated_isotope('${PATH_TSL_TABLE}\/\')"`
24 $ echo "The isotope under consideration is ${ISOTOPE} and the associated isotope is ${ASSOCIATED_ISOTOPE}."
25 The isotope under consideration is tsL_H_H2O and the associated isotope is 1-H-1g.
26 $ git clone http://gitlab-ci-token:${CI_JOB_TOKEN}@git.oecd-nea.org/databank/nds/jeff/evaluations/isotopes/${ASSOCIATED_ISOTOPE}
27 Cloning into '1-H-1g'...
28 warning: redirecting to http://git.oecd-nea.org/databank/nds/jeff/evaluations/isotopes/1-H-1g.git/
29 $ cp ${ISOTOPE}.txt tape34
30 $ cp ${ASSOCIATED_ISOTOPE}/${ASSOCIATED_ISOTOPE}.txt tape30
31 $ python3 processing-pipeline/scripts/run_njoy_tsl.py "${ISOTOPE}" "${ASSOCIATED_ISOTOPE}" "${PATH_TSL_TABLE}"
32 njoy 2016.67 26May22 03/31/23 16:10:52
33 *****
34 moder... 0.0s
35 reconr... 0.0s
```

TSL pipeline

Data Bank > ... > Isotopes > tsLH_H2O > Jobs > #33695

passed Job NJOY_for_TSL triggered 2 weeks ago by FOLIGNO Daniela, NEA/DB

```
Search job log [Q] [?] [📄] [↑] [↓]

1 Running with gitlab-runner 11.2.0 (11.2.0)
2   on Databank_ubuntu_20.04_generic zEpMj8f6
3 Using Docker executor with image registry.oecd-nea.org/nds/njoy2016:v71_ubuntu-20 ...
4 Pulling docker image registry.oecd-nea.org/infra/docker-registry/gitlab-runner-helper:11.2.0 ...
5 Using docker image sha256:ff853cacff1d70ab6fae1cc8c495d8d79b7b9cb1dbbe8b2592c77e7161a38c for registry.oecd-nea.org/infra/docker-registry/gitlab-runner-helper:11.2.0 ...
6 Pulling docker image registry.oecd-nea.org/nds/njoy2016:v71_ubuntu-20 ...
7 Using docker image sha256:5dc6f46343f53473c0aba1a63daccf5beecf129a03e24f869886c9801fb94d4 for registry.oecd-nea.org/nds/njoy2016:v71_ubuntu-20 ...
8 Running on runner-zEpMj8f6-project-1133-concurrent-1 via runndslin01... 00:02
9
10 Cloning repository for JEFF with git depth set to 10... 00:04
11 Cloning into '/builds/databank/nds/jeff/evaluations/isotopes/tsLH_H2O'...
12 Checking out da1530ba as JEFF...
13 Skipping Git submodules setup
14
15
16
17 $ git clone --branch add_tsl http://gitlab-ci-token:${CI_JOB_TOKEN}@git.oecd-nea.org/databank/nds/jeff/evaluations/processing-pipeline 01:14:49
18 Cloning into 'processing-pipeline'...
19 warning: redirecting to http://git.oecd-nea.org/databank/nds/jeff/evaluations/processing-pipeline.git/
20 $ export PYTHONPATH='./processing-pipeline/scripts'
21 $ export PATH_TSL_TABLE=processing-pipeline/TSL_parameters.csv
22 $ export ISOTOPE
23 $ export ASSOCIATED_ISOTOPE=`python3 -c "import functions_njoy; functions_njoy.get_associated
24 $ echo "The isotope under consideration is ${ISOTOPE} and the associated isotope is ${ASSOCIATED_ISOTOPE}."
25 The isotope under consideration is tsLH_H2O and the associated isotope is 1-H-1g.
26 $ git clone http://gitlab-ci-token:${CI_JOB_TOKEN}@git.oecd-nea.org/databank/nds/jeff/evaluations/processing-pipeline/1-H-1g.git/
27 Cloning into '1-H-1g'...
28 warning: redirecting to http://git.oecd-nea.org/databank/nds/jeff/evaluations/isotopes/1-H-1g.git/
29 $ cp ${ISOTOPE}.txt tape34
30 $ cp ${ASSOCIATED_ISOTOPE}/${ASSOCIATED_ISOTOPE}.txt tape30
31 $ python3 processing-pipeline/scripts/run_njoy_tsl.py "${ISOTOPE}" "${ASSOCIATED_ISOTOPE}" "${PATH_TSL_TABLE}"
32 njoy 2016.67 26May22 03/31/23 16:10:52
33 *****
34 moder... 0.0s
35 reconr... 0.0s
```

A script retrieves what is the major scattering atom bound in the TSL evaluation (e.g. H bound in H2O)

TSL Parameters

Data Bank > ... > Isotopes > tsLH_H2O > Jobs > #33695

passed Job NJOY_for_TSL triggered 2 weeks ago by FOLIGNO Daniela,

```

1 Running with gitlab-runner 11.2.0 (11.2.0)
2   on Databank_ubuntu_20.04_generic zEpMj8f6
3 Using Docker executor with image registry.oecd-nea.org/nds/njoy
4 Pulling docker image registry.oecd-nea.org/infra/docker-regist
5 Using docker image sha256:ff853cacff1d70ab6fae1cc8c495d8d79b
er:11.2.0 ...
6 Pulling docker image registry.oecd-nea.org/nds/njoy2016:v71_ub
7 Using docker image sha256:5dc6f46343f53473c0aba1a63daccf5be1cc
8 Running on runner-zEpMj8f6-project-1133-concurrent-1 via runnd
9
10 Cloning repository for JEFF with git depth set to 10...
```

	column 1	column 2	column 3	column 4	column 5
1	TSL file	Associated Isotope	TNAME	MTI	NBIN
2	tsl_Al_Al2O3	13-Al-27g	asap	221	32
3	tsl_4-Be	4-Be-9g	Be	231	16
4	tsl_Ca_CaH2	20-Ca-40g	cacah2	249	16
5	tsl_D_D2O	1-H-2g	dd2o	228	32
6	tsl_ortho-D	1-H-2g	orthod	221	32
7	tsl_para-D	1-H-2g	parad	221	32
8	tsl_Graphite	6-C-12g	graph	229	16
9	tsl_H_CaH2	1-H-1g	hcah2	249	16
10	tsl_H_CH2	1-H-1g	hch2	221	16
11	tsl_H_H2O	1-H-1g	hh2o	222	16
12	tsl_H_Ice	1-H-1g	hice	221	32
13	tsl_Mesi-Phll	1-H-1g	mesi	221	32
14	tsl_ortho-H	1-H-1g	orthoh	221	32
15	tsl_para-H	1-H-1g	parah	221	32
	Phll	1-H-1g	tol	221	32
		1-H-1g	hzrh	225	16
		12-Mg-24g	mg24	249	16
	O3	8-O-16g	osap	221	32
	O	8-O-16g	od2o	222	32
		14-Si-28g	sili	221	32

Table 25: Conventional values for the thermal MT numbers (MTI and MTE) used in ACER and THERMR for ENDF/B-VII

Thermal Material	MTI Value	MTE Value
H in H ₂ O	222	
D in D ₂ O	228	
Be metal	231	232
Graphite	229	230
Benzine	227	
Zr in ZrH	235	236
H in ZrH	225	226
Be(BeO)	233	234
O(BeO)	237	238
H in Polyethylene	223	224
U(UO ₂)	241	242
O(UO ₂)	239	240
Al	243	244
Fe	245	246

```

ed_isotope("${PATH_TSL_TABLE}")"
ATED_ISOTOPE}."
ations/isotopes/${ASSOCIATED_ISOTOPE}
es/1-H-1g.git/
"${PATH_TSL_TABLE}"
```


Temperatures

```
546 List of temperatures (K) in the TSL file:
547 273.15 275.0 280.0 283.6 285.0 290.0 293.6 295.0 300.0 305.0 310.0 315.0 320.0 323.6 325.0 330.0 335.0 340.0 345.0 350.0 355.0 360.0 36
5.0 370.0 373.6 375.0 380.0 385.0 390.0 395.0 400.0 405.0 410.0 415.0 420.0 423.6 425.0 430.0 435.0 440.0 445.0 450.0 455.0 460.0 465.0
470.0 473.6 475.0 480.0 485.0 490.0 495.0 500.0 505.0 510.0 515.0 520.0 523.6 525.0 530.0 535.0 540.0 545.0 550.0 555.0 560.0 565.0 570.
0 573.6 575.0 580.0 585.0 590.0 595.0 600.0 605.0 610.0 615.0 620.0 623.6 625.0 630.0 635.0 640.0 645.0 647.1 650.0 700.0 750.0 800.0 8
50.0 900.0 950.0 1000.0
548 This TSL has 94 temperatures and it must be processed in 5 rounds
```

Data Bank > ... > Isotopes > tsLH_H2O > Jobs > #33695 > Artifacts

 Job #33695 in pipeline #9075 for da1530ba from JEFF by  FOLIGNO Daniela, NEA/DB 2 weeks ago

Artifacts / njoy_tsl

 Download artifacts archive

Name	Size
..	
ace-dir	
graphs	
inout	
library-c	
pendf	

THERMR expects the requested temperature T to be one of the temperatures included in the ENDF-B thermal file

Output files

```
546 List of temperatures (K) in the TSL file:
547 273.15 275.0 280.0 283.6 285.0 290.0 293.6 295.0 300.0 305.0 310.0 315.0 320.0 323.6 325.0 330.0 335.0 340.0 345.0 350.0 355.0 360.0 36
5.0 370.0 373.6 375.0 380.0 385.0 390.0 395.0 400.0 405.0 410.0 415.0 420.0 423.6 425.0 430.0 435.0 440.0 445.0 450.0 455.0 460.0 465.0
470.0 473.6 475.0 480.0 485.0 490.0 495.0 500.0 505.0 510.0 515.0 520.0 523.6 525.0 530.0 535.0 540.0 545.0 550.0 555.0 560.0 565.0 570.
0 573.6 575.0 580.0 585.0 590.0 595.0 600.0 605.0 610.0 615.0 620.0 623.6 625.0 630.0 635.0 640.0 645.0 647.1 650.0 700.0 750.0 800.0 8
50.0 900.0 950.0 1000.0
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Data Bank > ... > Isotopes > tsLH_H2O > Jobs > #33695 > Artifacts

passed Job #33695 in pipeline #9075 for da1530ba from JEFF by FOLIGNO Daniela, NEA/DB 2 weeks ago

Artifacts / njoy_tsl

Name
..
ace-dir
graphs
inout
library-c
pendf

Data Bank > ... > Isotopes > tsLH_H2O > Jobs > #33695 > Artifacts

passed Job #33695 in pipeline #9075 for da1530ba from JEFF by FOLIGNO Daniela, NEA/DB 2 weeks ago

Artifacts / njoy_tsl / library-c

Download artifacts archive

Name	Size
..	
hh2o.00_273.15_p.asc	2.46 MB
hh2o.01_275.0_p.asc	2.46 MB
hh2o.02_280.0_p.asc	2.46 MB
hh2o.03_283.6_p.asc	2.46 MB
hh2o.04_285.0_p.asc	2.46 MB
hh2o.05_290.0_p.asc	2.46 MB
hh2o.06_293.6_p.asc	2.46 MB
hh2o.07_295.0_p.asc	2.46 MB
hh2o.08_300.0_p.asc	2.46 MB
hh2o.09_305.0_p.asc	2.46 MB
hh2o.10_310.0_p.asc	2.46 MB
hh2o.11_315.0_p.asc	2.46 MB
hh2o.12_320.0_p.asc	2.46 MB
hh2o.13_323.6_p.asc	2.46 MB
hh2o.14_325.0_p.asc	2.46 MB

ACE files

Output files

```
546 List of temperatures (K) in the TSL file:
547 273.15 275.0 280.0 283.6 285.0 290.0 293.6 295.0 300.0 305.0 310.0 315.0 320.0 323.6 325.0 330.0 335.0 340.0 345.0 350.0 355.0 360.0 36
5.0 370.0 373.6 375.0 380.0 385.0 390.0 395.0 400.0 405.0 410.0 415.0 420.0 423.6 425.0 430.0 435.0 440.0 445.0 450.0 455.0 460.0 465.0
470.0 473.6 475.0 480.0 485.0 490.0 495.0 500.0 505.0 510.0 515.0 520.0 523.6 525.0 530.0 535.0 540.0 545.0 550.0 555.0 560.0 565.0 570.
0 573.6 575.0 580.0 585.0 590.0 595.0 600.0 605.0 610.0 615.0 620.0 623.6 625.0 630.0 635.0 640.0 645.0 647.1 650.0 700.0 750.0 800.0 8
50.0 900.0 950.0 1000.0
548 This TSL has 94 temperatures and it must be processed in 5 rounds
```

Data Bank > ... > Isotopes > tsLH₂O > Jobs > #33695 > Artifacts

passed Job #33695 in pipeline #9075 for da1530ba from JEFF by FOLIGNO Daniela, NEA/DB

Artifacts / njoy_tsl

- Name
- ..
- ace-dir
- graphs
- inout
- library-c
- pendf

datapath=/Sorted/library-c
atomic weight ratios
hh2o 0.999167

directory	hh2o_00t	hh2o_01t	hh2o_02t	hh2o_03t	hh2o_04t	hh2o_05t	hh2o_06t	hh2o_07t	hh2o_08t	hh2o_09t	hh2o_10t	hh2o_11t	hh2o_12t	hh2o_13t	hh2o_14t	hh2o_15t	hh2o_16t	hh2o_17t	hh2o_18t	hh2o_19t	hh2o_20t	hh2o_21t	hh2o_22t	hh2o_23t	hh2o_24t	hh2o_25t	hh2o_26t	hh2o_27t	hh2o_28t	hh2o_29t	hh2o_30t	hh2o_31t	hh2o_32t	hh2o_33t	hh2o_34t	hh2o_35t	hh2o_36t	hh2o_37t	hh2o_38t	hh2o_39t	hh2o_40t	hh2o_41t	hh2o_42t	hh2o_43t	hh2o_44t	hh2o_45t	hh2o_46t	hh2o_47t	hh2o_48t	hh2o_49t	hh2o_50t																																																																																																																																																																																																																																																																																																																																																																				
hh2o_00_273.15	0	1	1	127531	0	0	2.354E-08	hh2o_01_275.0	0	1	1	127531	0	0	2.370E-08	hh2o_02_280.0	0	1	1	127531	0	0	2.413E-08	hh2o_03_283.6	0	1	1	127531	0	0	2.444E-08	hh2o_04_285.0	0	1	1	127531	0	0	2.456E-08	hh2o_05_290.0	0	1	1	127531	0	0	2.499E-08	hh2o_06_293.6	0	1	1	127531	0	0	2.530E-08	hh2o_07_295.0	0	1	1	127531	0	0	2.542E-08	hh2o_08_300.0	0	1	1	127531	0	0	2.585E-08	hh2o_09_305.0	0	1	1	127531	0	0	2.628E-08	hh2o_10_310.0	0	1	1	127531	0	0	2.671E-08	hh2o_11_315.0	0	1	1	127531	0	0	2.714E-08	hh2o_12_320.0	0	1	1	127531	0	0	2.758E-08	hh2o_13_323.6	0	1	1	127531	0	0	2.789E-08	hh2o_14_325.0	0	1	1	127531	0	0	2.801E-08	hh2o_15_330.0	0	1	1	127531	0	0	2.844E-08	hh2o_16_335.0	0	1	1	127531	0	0	2.887E-08	hh2o_17_340.0	0	1	1	127531	0	0	2.930E-08	hh2o_18_345.0	0	1	1	127531	0	0	2.973E-08	hh2o_19_350.0	0	1	1	127531	0	0	3.016E-08	hh2o_20_355.0	0	1	1	127531	0	0	3.059E-08	hh2o_21_360.0	0	1	1	127531	0	0	3.102E-08	hh2o_22_365.0	0	1	1	127531	0	0	3.145E-08	hh2o_23_370.0	0	1	1	127531	0	0	3.188E-08	hh2o_24_373.6	0	1	1	127531	0	0	3.219E-08	hh2o_25_375.0	0	1	1	127531	0	0	3.231E-08	hh2o_26_380.0	0	1	1	127531	0	0	3.275E-08	hh2o_27_385.0	0	1	1	127531	0	0	3.318E-08	hh2o_28_390.0	0	1	1	127531	0	0	3.361E-08	hh2o_29_395.0	0	1	1	127531	0	0	3.404E-08	hh2o_30_400.0	0	1	1	127531	0	0	3.447E-08	hh2o_31_405.0	0	1	1	127531	0	0	3.490E-08	hh2o_32_410.0	0	1	1	127531	0	0	3.533E-08	hh2o_33_415.0	0	1	1	127531	0	0	3.576E-08	hh2o_34_420.0	0	1	1	127531	0	0	3.619E-08	hh2o_35_423.6	0	1	1	127531	0	0	3.650E-08	hh2o_36_425.0	0	1	1	127531	0	0	3.662E-08	hh2o_37_430.0	0	1	1	127531	0	0	3.705E-08	hh2o_38_435.0	0	1	1	127531	0	0	3.749E-08	hh2o_39_440.0	0	1	1	127531	0	0	3.792E-08	hh2o_40_445.0	0	1	1	127531	0	0	3.835E-08	hh2o_41_450.0	0	1	1	127531	0	0	3.878E-08	hh2o_42_455.0	0	1	1	127531	0	0	3.921E-08	hh2o_43_460.0	0	1	1	127531	0	0	3.964E-08	hh2o_44_465.0	0	1	1	127531	0	0	4.007E-08	hh2o_45_470.0	0	1	1	127531	0	0	4.050E-08	hh2o_46_473.6	0	1	1	127531	0	0	4.081E-08	hh2o_47_475.0	0	1	1	127531	0	0	4.093E-08	hh2o_48_480.0	0	1	1	127531	0	0	4.136E-08	hh2o_49_485.0	0	1	1	127531	0	0	4.179E-08	hh2o_50_490.0	0	1	1	127531	0	0	4.222E-08

xmdir for MCNP

Output files

```
546 List of temperatures (K) in the TSL file:
547 273.15 275.0 280.0 283.6 285.0 290.0 293.6 295.0 300.0 305.0 310.0 315.0 320.0 323.6 325.0 330.0 335.0 340.0 345.0 350.0 355.0 360.0 36
5.0 370.0 373.6 375.0 380.0 385.0 390.0 395.0 400.0 405.0 410.0 415.0 420.0 423.6 425.0 430.0 435.0 440.0 445.0 450.0 455.0 460.0 465.0
470.0 473.6 475.0 480.0 485.0 490.0 495.0 500.0 505.0 510.0 515.0 520.0 523.6 525.0 530.0 535.0 540.0 545.0 550.0 555.0 560.0 565.0 570.
0 573.6 575.0 580.0 585.0 590.0 595.0 600.0 605.0 610.0 615.0 620.0 623.6 625.0 630.0 635.0 640.0 645.0 647.1 650.0 700.0 750.0 800.0 8
50.0 900.0 950.0 1000.0
548 This TSL has 94 temperatures and it must be processed in 5 rounds
```

Data Bank > ... > Isotopes > tsLH₂O > Jobs > #33695 > Artifacts

passed Job #33695 in pipeline #9075 for da1530ba from JEFF by FOLIGNO Daniela, NEA/DB 2 weeks ago

Artifacts / njoy_tsl

Name

..

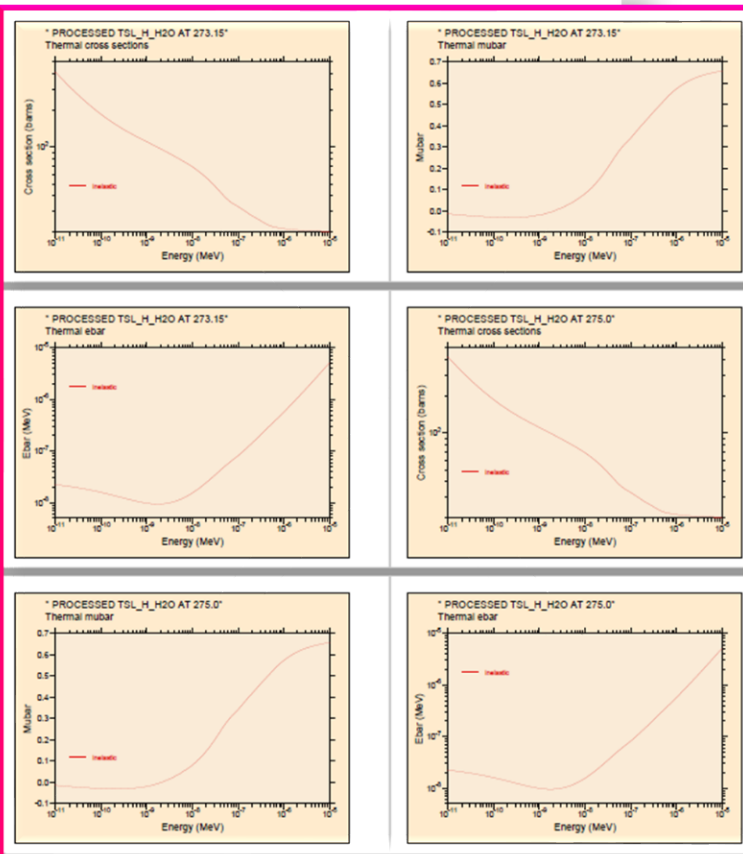
ace-dir

graphs

inout

library-c

pendf



Plots

Output files

The link provided below contains the processed files for H in H2O:
<https://www.oecd-nea.org/dbdata/nds/JEFF4T2/TSL/Processed/Sorted/>

The image displays a file directory listing on the left and a grid of six plots on the right. The directory listing shows files named hh2o.000 through hh2o.580, each with a size of 2.46 MB. The plots show the cross-section (Sigma) versus Energy (MeV) for H in H2O at various temperatures (273.15 K and 275.0 K). The plots are arranged in a 3x2 grid. The top row shows the total cross-section (Sigma_t) and the thermal nuclear cross-section (Sigma_nu). The middle row shows the elastic scattering cross-section (Sigma_s) and the total cross-section (Sigma_t). The bottom row shows the inelastic scattering cross-section (Sigma_in) and the total cross-section (Sigma_t). The plots are titled 'PROCESSED TSL_H_H2O AT 273.15' and 'PROCESSED TSL_H_H2O AT 275.0'.

```
Directory
hh2o.000 0.999167 hh2o.00_273.15 0 1 1 127531 0 0 2.354E-08
hh2o.010 0.999167 hh2o.01_275.0 1 1 127531 0 0 2.370E-08
hh2o.020 0.999167 hh2o.02_280.0 1 1 127531 0 0 2.413E-08
hh2o.030 0.999167 hh2o.03_283.6 0 1 1 127531 0 0 2.444E-08
hh2o.040 0.999167 hh2o.04_285.0 0 1 1 127531 0 0 2.456E-08
hh2o.050 0.999167 hh2o.05_290.0 1 1 127531 0 0 2.499E-08
hh2o.060 0.999167 hh2o.06_293.6 0 1 1 127531 0 0 2.530E-08
hh2o.070 0.999167 hh2o.07_295.0 0 1 1 127531 0 0 2.542E-08
hh2o.080 0.999167 hh2o.08_300.0 1 1 127531 0 0 2.585E-08
hh2o.090 0.999167 hh2o.09_305.0 1 1 127531 0 0 2.630E-08
hh2o.100 0.999167 hh2o.10_310.0 0 1 1 127531 0 0 2.671E-08
hh2o.110 0.999167 hh2o.11_315.0 0 1 1 127531 0 0 2.714E-08
hh2o.120 0.999167 hh2o.12_320.0 1 1 127531 0 0 2.758E-08
hh2o.130 0.999167 hh2o.13_323.6 0 1 1 127531 0 0 2.789E-08
hh2o.140 0.999167 hh2o.14_325.0 1 1 127531 0 0 2.801E-08
hh2o.150 0.999167 hh2o.15_330.0 0 1 1 127531 0 0 2.844E-08
hh2o.160 0.999167 hh2o.16_335.0 0 1 1 127531 0 0 2.887E-08
hh2o.170 0.999167 hh2o.17_340.0 1 1 127531 0 0 2.930E-08
hh2o.180 0.999167 hh2o.18_345.0 1 1 127531 0 0 2.973E-08
hh2o.190 0.999167 hh2o.19_350.0 1 1 127531 0 0 3.016E-08
hh2o.200 0.999167 hh2o.20_355.0 1 1 127531 0 0 3.059E-08
hh2o.210 0.999167 hh2o.21_360.0 1 1 127531 0 0 3.102E-08
hh2o.220 0.999167 hh2o.22_365.0 1 1 127531 0 0 3.145E-08
hh2o.230 0.999167 hh2o.23_370.0 1 1 127531 0 0 3.188E-08
hh2o.240 0.999167 hh2o.24_373.6 1 1 127531 0 0 3.219E-08
hh2o.250 0.999167 hh2o.25_375.0 0 1 1 127531 0 0 3.231E-08
hh2o.260 0.999167 hh2o.26_380.0 1 1 127531 0 0 3.275E-08
hh2o.270 0.999167 hh2o.27_385.0 1 1 127531 0 0 3.318E-08
hh2o.280 0.999167 hh2o.28_390.0 1 1 127531 0 0 3.361E-08
hh2o.290 0.999167 hh2o.29_395.0 1 1 127531 0 0 3.404E-08
hh2o.300 0.999167 hh2o.30_400.0 1 1 127531 0 0 3.447E-08
hh2o.310 0.999167 hh2o.31_405.0 1 1 127531 0 0 3.490E-08
hh2o.320 0.999167 hh2o.32_410.0 1 1 127531 0 0 3.533E-08
hh2o.330 0.999167 hh2o.33_415.0 1 1 127531 0 0 3.576E-08
hh2o.340 0.999167 hh2o.34_420.0 1 1 127531 0 0 3.619E-08
hh2o.350 0.999167 hh2o.35_423.6 1 1 127531 0 0 3.650E-08
hh2o.360 0.999167 hh2o.36_425.0 1 1 127531 0 0 3.662E-08
hh2o.370 0.999167 hh2o.37_430.0 1 1 127531 0 0 3.705E-08
hh2o.380 0.999167 hh2o.38_435.0 1 1 127531 0 0 3.749E-08
hh2o.390 0.999167 hh2o.39_440.0 1 1 127531 0 0 3.792E-08
hh2o.400 0.999167 hh2o.40_445.0 1 1 127531 0 0 3.835E-08
hh2o.410 0.999167 hh2o.41_450.0 1 1 127531 0 0 3.878E-08
hh2o.420 0.999167 hh2o.42_455.0 1 1 127531 0 0 3.921E-08
hh2o.430 0.999167 hh2o.43_460.0 1 1 127531 0 0 3.964E-08
hh2o.440 0.999167 hh2o.44_465.0 1 1 127531 0 0 4.007E-08
hh2o.450 0.999167 hh2o.45_470.0 1 1 127531 0 0 4.050E-08
hh2o.460 0.999167 hh2o.46_473.6 1 1 127531 0 0 4.081E-08
hh2o.470 0.999167 hh2o.47_475.0 1 1 127531 0 0 4.093E-08
hh2o.480 0.999167 hh2o.48_480.0 1 1 127531 0 0 4.136E-08
hh2o.490 0.999167 hh2o.49_485.0 1 1 127531 0 0 4.179E-08
hh2o.500 0.999167 hh2o.50_490.0 1 1 127531 0 0 4.222E-08
```

Output files

The link provided below contains the processed files for H in H2O:
<https://www.oecd-nea.org/dbdata/nds/JEFF4T2/TSL/Processed/Sorted/>

directory

Name	Size
hh2o_00_273.15.p.asc	2.46 MB
hh2o_01_275.0.p.asc	2.46 MB
hh2o_02_280.0.p.asc	2.46 MB
hh2o_03_283.6.p.asc	2.46 MB
hh2o_04_285.0.p.asc	2.46 MB
hh2o_05_290.0.p.asc	2.46 MB
hh2o_06_293.6.p.asc	2.46 MB
hh2o_07_295.0.p.asc	2.46 MB
hh2o_08_300.0.p.asc	2.46 MB
hh2o_09_306.0.p.asc	2.46 MB
hh2o_10_310.0.p.asc	2.46 MB
hh2o_11_315.0.p.asc	2.46 MB
hh2o_12_320.0.p.asc	2.46 MB
hh2o_13_323.6.p.asc	2.46 MB
hh2o_14_325.0.p.asc	2.46 MB

```
atomic weight ratios
hh2o  0.999167

hh2o_00_273.15  0  1  1  127531  0  0  2.354E-08
hh2o_01_275.0  0  1  1  127531  0  0  2.370E-08
hh2o_02_280.0  0  1  1  127531  0  0  2.413E-08
hh2o_03_283.6  0  1  1  127531  0  0  2.444E-08
hh2o_04_285.0  0  1  1  127531  0  0  2.456E-08
hh2o_05_290.0  0  1  1  127531  0  0  2.499E-08
hh2o_06_293.6  0  1  1  127531  0  0  2.530E-08
hh2o_07_295.0  0  1  1  127531  0  0  2.542E-08
hh2o_08_300.0  0  1  1  127531  0  0  2.585E-08
hh2o_09_306.0  0  1  1  127531  0  0  2.628E-08
hh2o_10_310.0  0  1  1  127531  0  0  2.671E-08
hh2o_11_315.0  0  1  1  127531  0  0  2.714E-08
hh2o_12_320.0  0  1  1  127531  0  0  2.758E-08
hh2o_13_323.6  0  1  1  127531  0  0  2.789E-08
```

Thanks to Ignacio and Oscar for providing their processing routine



Thank you for your attention

Please contact me
(daniela.foligno@oecd-nea.org) if you
have any questions or comments.