Tutorials for The Stellar Abundances for Galactic Archaeology (SAGA) Database

Takuma Suda
(NAOJ)

SAGA Database (Stellar Abundances for Galactic Archaeology)

Suda et al. (2008, PASJ, 60, 1159-1171)

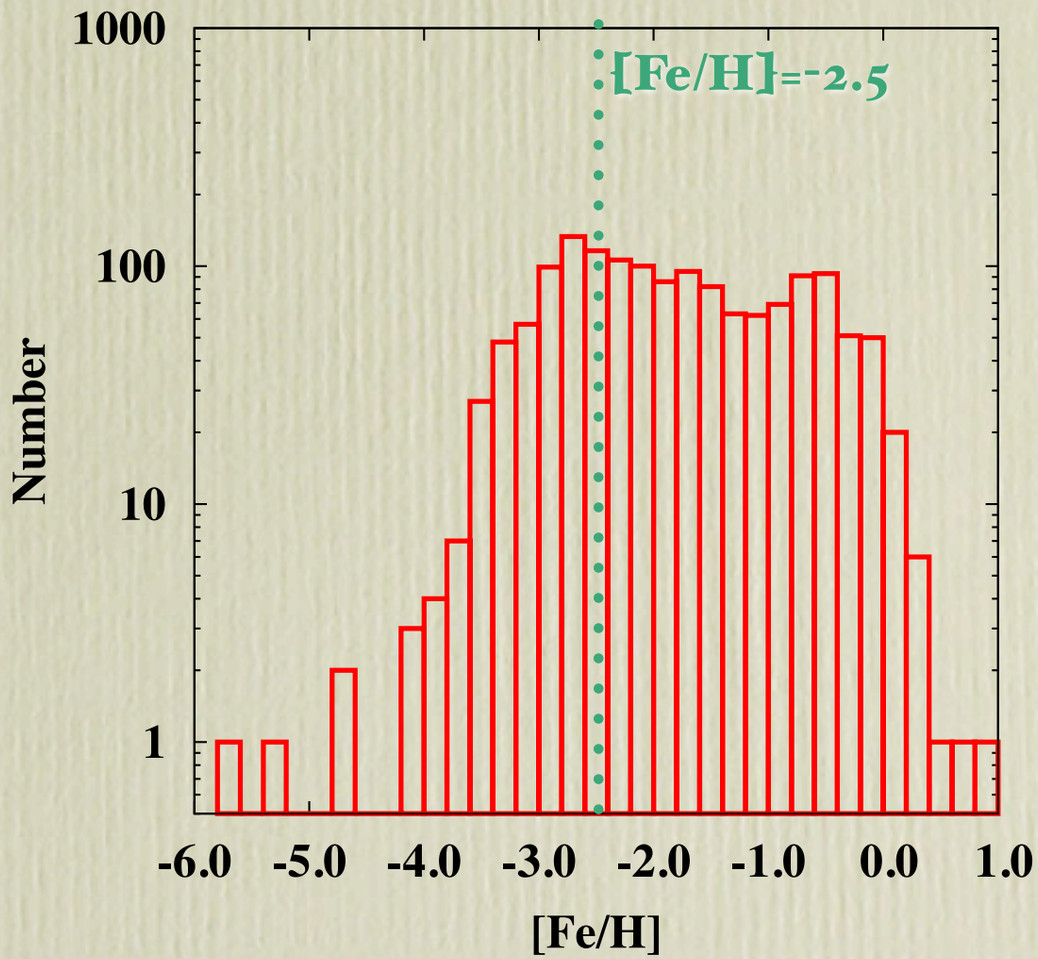
http://saga.sci.hokudai.ac.jp

http://www.astro.keele.ac.uk/saga

1. Collection of observed data
   - ☆ Taken from the literature on the abundance analyses of stars in our Galactic halo
   - ☆ **Papers including stars with [Fe/H]<-2.5**
2. Compilation of adopted stellar parameters, derived abundance data, etc.
   - ☆ Data Registration System
3. Use of compiled data
   - ☆ Search and Plot

DATA SAMPLE as of June, 2012

Papers: 185 (covering 2000-2011)
Stars: 4270 (1488 unique stars)
Data
- [X/H]: 27,686
- V band mag.: 1,031
- Position data.: 1,034



Screen Snapshot of SAGA Database

[[start]] SAGA

Show pagesource | Old revisions | Recent changes | Search

Trace: • start

SAGA -Stellar Abundances for Galactic Archeology Database-

This site is public since 24th of June, 2008 (go to UK mirror site)

- Retrieval - Last update of the retrieval system on **Oct. 31, 2010** and the database on **Oct. 31, 2010**.
  - Previous Versions - Last update on Oct. 31, 2010
- SAGA viewer - easy comparison between stars, new release on Nov. 2, 2010
- Readme-Important notes when using the SAGA database
- Information and News on update history (Database covers the paper published by Dec. 2009.)
  - Update history of the database
  - Update history of the data retrieval system
- Tutorial-Tutorial for the data retrieval system
- List of papers
- List of objects
- FeedBacks-Please give us any questions, comments, and suggestions on data and database - not created yet
- Links-Links to related institute

Data search and plot

How to search the data

News and Information

Links to the data of papers and objects

SAGA Papers

Please cite the following paper if you think that the SAGA database is helpful in writing your paper.

"The Stellar Abundances for Galactic Archeology (SAGA) Database - Compilation of the Characteristics of Known Extremely Metal-Poor Stars"

T. Suda, Y. Katsuta, S. Yamada, T. Suwa, C. Ishizuka, Y. Komiya, K. Sorai, M. Aikawa, and M. Y. Fujimoto, **PASJ**, 2008, vol.60, 1159-1171

The paper is available at PASJ web site for free until the end of 2008 (probably still now).

- "The Stellar Abundances for Galactic Archaeology (SAGA) Database II - Implications for Mixing and Nucleosynthesis in Extremely Metal-Poor Stars and Chemical Enrichment of the Galaxy"
  - T. Suda, S. Yamada, Y. Katsuta, Y. Komiya, C. Ishizuka, W. Aoki, and M. Y. Fujimoto, accepted by **MNRAS** on Oct. 28, 2010, arXiv:1010.6272.
  - Five sets of database to produce figures in the paper are available here.

Contact Information

Please contact saga-admin@astro1.sci.hokudai.ac.jp if you have any problems.

The SAGA database systems are maintained by Takuma Suda, Yutaka Katsuta, and Shimako Yamada.

License

The Stellar Abundances for Galactic Archaeology (SAGA) Database by SAGA database is licensed under a Creative Commons 表示-非営利-継承 2.1 日本 License

Data Retrieval System for SAGA Database

DATA SEARCH AND PLOT

Last update of database: 2010-03-16 18:01:16

* not working
** Other options do not work.

Query

search | example | * | reset

Specify X and Y axis

Graph Options

Xaxis	Category	Li	[Fe/H]	From :		To :	Include data with upper limit
Yaxis				From :		To :	Include data with upper limit
Criterion +				From :		To :	Include data with upper limit

Additional criteria

Range

Category: Category, log-e, [X/H], [X/Fe], Atmospheric Parameters, Photometric Parameters, Binary Parameters, Position and Velocity, Isotopic Ratio

Li: Li, Li I, Be, Be II, C, C I, CH, C2, N, CN, NH, O, O I, OH, F, F, Na, Na I, Mg, Mg I

Optional Criterion

Object	0107-5240", "CS", "0107"
Binarity	m To
Magnitude	Band : From mag
Resolution	< R <

Bibliographical Criterion

Author	hor ex) "Lastname" strict forward agr ward agreement fuzzy
Reference	ALL
Publication Year	From To

Retrieval Options

Display / Page	10
Order by**	Object
Output Option	single file
Histogram Option	Range (necessary for histgram)
Cross Search	cross papers

Output Option: separated files, single file, histgram

search | example | * | reset

SAGA SEARCH RESULT

Search Result

plot | restart | reset | plot_all

Results : 420

#		Object	Reference	[Fe/H]	Teff	logg	[Fe/H]	log-e(Li)
1	☐	BD-09_4604	C.Charbonnel+,AAP, 442, 961, 2005	-1.38	5660	4	⊙-1.38	⊙2.121
2	☐	BD-10_155	C.Charbonnel+,AAP, 442, 961, 2005	-2.87	5008	3	⊙-2.87	⊙1.018
3	☐	BD-10_388	C.Charbonnel+,AAP, 442, 961, 2005	-2.51	6287	3.85	⊙-2.51	⊙2.257
4	☐	BD-12_3709	C.Charbonnel+,AAP, 442, 961, 2005	-1.34	5278	3	⊙-1.34	⊙1.268
5	☐	BD-14_5890	C.Charbonnel+,AAP, 442, 961, 2005	-2.07	4885	3	⊙-2.07	⊙1.025
			B.W.Carney+,AJ, 125, 293, 2003	-2.01	4840	2.1	○-2.01	
6	☐	BD-15_6355	C.Charbonnel+,AAP, 442, 961, 2005	-1.83	6349	4	⊙-1.83	⊙2.351
7	☐	BD-17_6692	C.Charbonnel+,AAP, 442, 961, 2005	-1.87	5065	3	⊙-1.87	⊙0.911
			M.Spite+,AAP, 430, 655, 2005	-3.06	4750	1.4	○-3.06	⊙0.75
			D.L.Burris+,ApJ, 544, 302, 2000	-3	4575	1.4	○-2.93	
			R.Cayrel+,AAP, 416, 1117, 2004	-3.06	4750	1.4	○-3.06	
			J.A.Johnson+,ApJS, 139, 219, 2002	-2.9	4600	0.95	⊙-3.03	
			A.McWilliam+,AJ, 109, 2757, 1995				○-2.91	
			J.Melendez+,ApJ, 575, 474, 2002	-2.87	4683	1.7	○-2.87	
			T.V.Mishenina+,AAP, 396, 189, 2002				○-3.01	
8	☐	BD-18_5550	T.V.Mishenina+,AAP, 370, 951, 2001	-3.01	4600	0.5	○-3.01	
			M.Spite+,AAP, 455, 291, 2006	-3.06	4750	1.4	○-3.06	
			S.M.Andrievsky+,AAP, 464, 1081, 2007	-3.06	4750	1.4	○-3.06	
			J.A.Johnson+,ApJ, 658, 1203, 2007	-2.89	4806	1.72	○-2.89	
			G.Bihain+,AAP, 423, 777, 2004	-3.01	4668	1.5	○-3.01	
			B.W.Carney+,AJ, 125, 293, 2003	-3.11	4820	1.8	○-3.11	
			S.M.Andrievsky+,AAP, 481, 481, 2008	-3.06	4750	1.4	○-3.06	
			J.A.Johnson+,ApJ, 579, 616, 2002				○-3.04	
			J.A.Johnson+,ApJ, 554, 888, 2001	-2.9	4600	0.95	○-3.05	
9	☐	BD-20_6718	C.Charbonnel+,AAP, 442, 961, 2005	-1.23	5064	3	⊙-1.23	⊙0.953
10	☐	BD-21_3420	R.Smiljanic+,ApJ, 644, L121, 2006	-1.04	5946	3.96	○-1.04	⊙1.95
			E.Caffau+,AAP, 441, 533, 2005	-1.04	5946	4.41	⊙-1.04	

previous | next

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20
21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40
41 42

PAGE : 7 / 42

Atmospheric parameters adopted for each object and reference

Retrieved values and available data. Choose one datum if two or more data are available.

Choose to plot this object

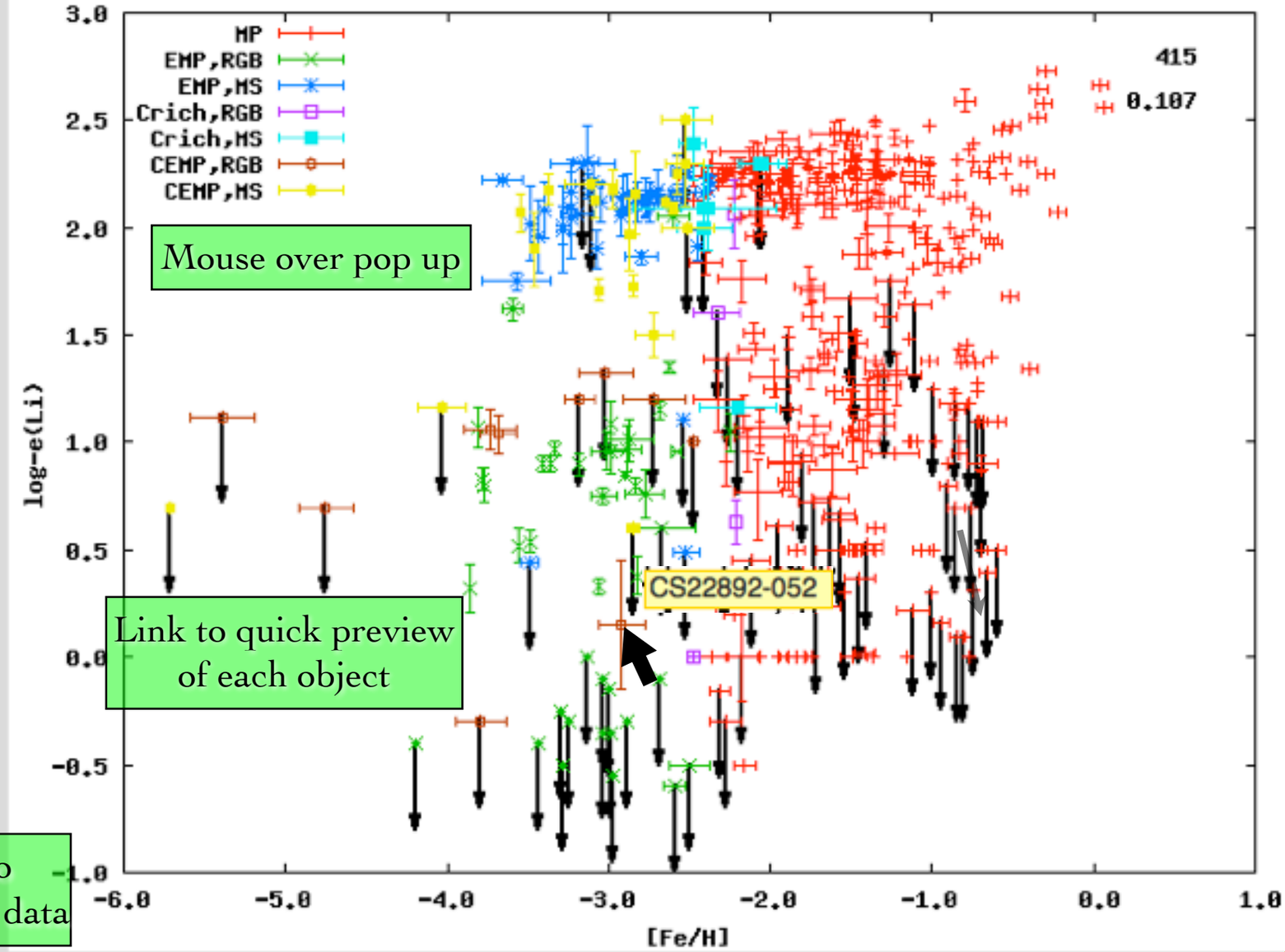
Links to quick preview files in HTML format

Plot

GRAPH PLOT

Automatically generated clickable map

Settings for figure



Mouse over pop up

Link to quick preview of each object

plot reset

Title

LEGEND

Left Top Right Top
Left Bottom Right Bottom
No Key Outside

LABEL

X : [Fe/H]

Y : log-e(Li)

SCALE

X : Linear Logscale

Y : Linear Logscale

Range

X Low : * High : *

Y Low : * High : *

> or < *

Link to numerical data

plot reset Delete all restart

Data		Legend	Size	Type*	Del*
1 :	MP		1	1	
2 :	EMP,RGB		1	2	
3 :	EMP,MS		1	3	
4 :	Crich,RGB		1	4	
5 :	Crich,MS		1	5	
6 :	CEMP,RGB		1	6	
7 :	CEMP,MS		1	7	

Control the list

Download Figures

Color Figures

png ps eps pdf

Download Data

download

Download data and script to reproduce figure

Load upload files

Upload Data*

UpLoad

Input Data* plot reset

DATATYPE=

BPS CS22892-052: found in 18 paper(s).

QUICK PREVIEW OF DATA

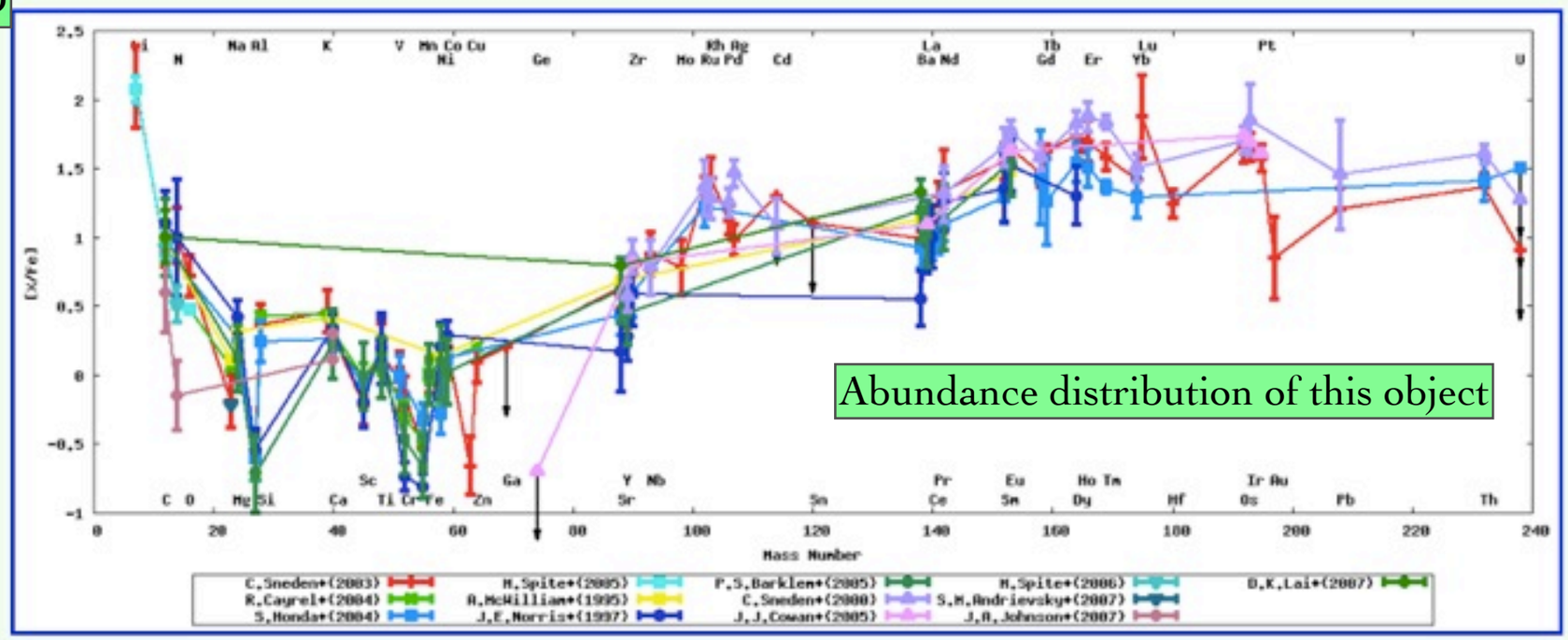
Labels:

/C.Sneden et al.(2003)/ /R.Cayrel et al.(2004)/ /S.Honda et al.(2004)/ /N.Christlieb et al.(2004)/ /M.Spite et al.(2005)/ /A.McWilliam et al.(1995)/ /A.McWilliam et al.(1995)/ /J.E.Norris et al.(1997)/ /G.W.Preston and C. Sneden(2001)/ /P.S.Barklem et al.(2005)/ /C.Sneden et al.(2000)/ /W.Aoki et al.(2003)/ /J.J.Cowan et al.(2005)/ /S.Honda et al.(2004)/ /M.Spite et al.(2006)/ /S.M.Andrievsky et al.(2007)/ /J.A.Johnson et al.(2007)/ /D.K.Lai et al.(2007)/

Links to quick preview for this object

Find this object in SIMBAD

Link to SIMBAD



C.Sneden et al.,ApJ, 591, 936, 2003 (A0003,ADS)

Link to ADS

Link to quick preview for this reference

Atmospheric data

T_{eff} : 4800	log g : 1.50	v_{turb} : 1.95

Stellar atmosphere parameters

Chemical Abundances

Element	Nline	[X/H]	[X/Fe]	log-e
Li I	...	-1.01+-0.30	2.09+-0.30	+0.15+-0.30
CH	...	-2.22+-0.10	+0.88+-0.10	+6.30+-0.10
CN	...	-2.09+-0.20	+1.01+-0.20	+5.83+-0.20
O I	...	-2.38+-0.15	+0.72+-0.15	+6.45+-0.15
Na I	...	-3.29+-0.19	-0.19+-0.19	+3.04+-0.19
Mg I	...	-2.87+-0.08	+0.30+-0.08	+4.78+-0.08
Al I	...	-3.68+-0.15	-0.58+-0.15	+2.79+-0.15
Si I	...	-2.74+-0.15	+0.36+-0.15	+4.81+-0.15

: Data presented in the paper
: Data converted with the solar abundance from Grevesse et al. (1996)

Abundance data

and information on photometry, observing log, and binarity

SAGA Viewer

Object Name CS295 add

- CS29502-042
- CS29502-092
- CS29503-010
- CS29506-007
- CS29506-090
- CS29509-027

- HE1337+0012
- HE0400-2030
- CS22960-053
- CS22949-037

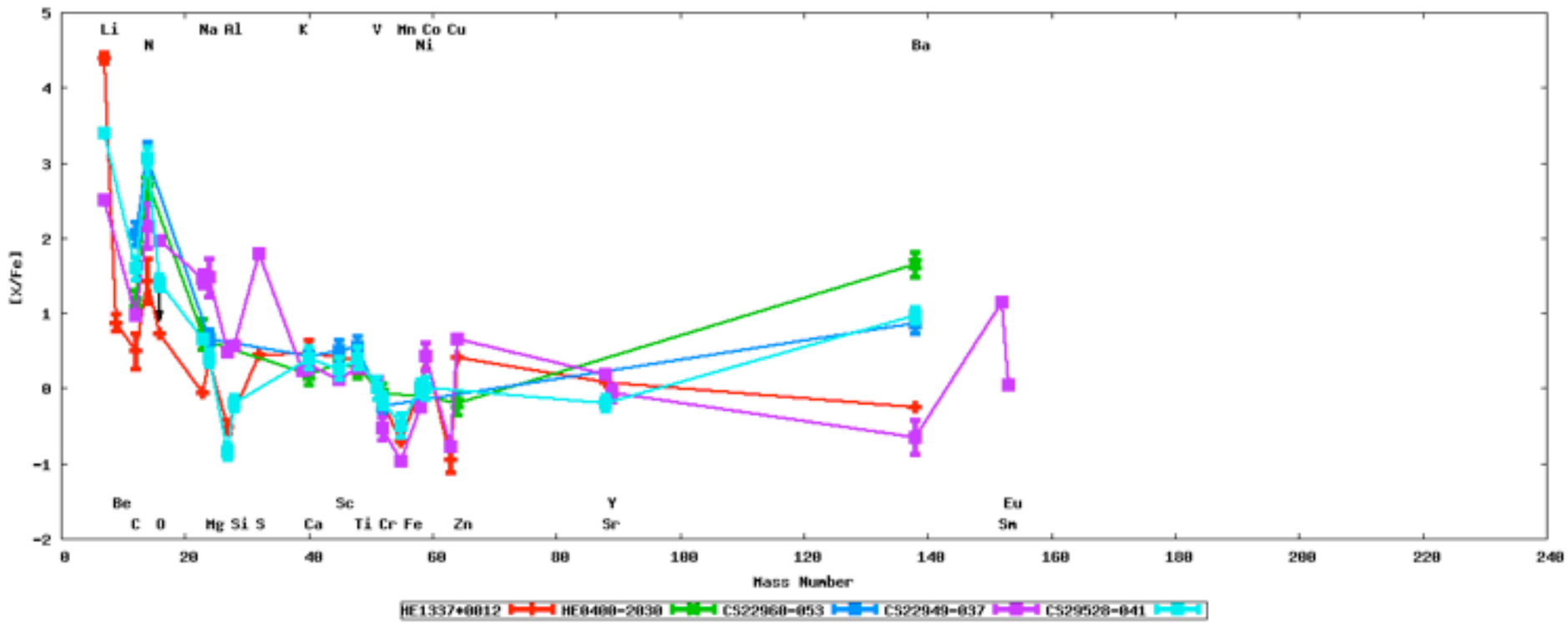
compare

- CS29528-041

compare

SAGA Viewer

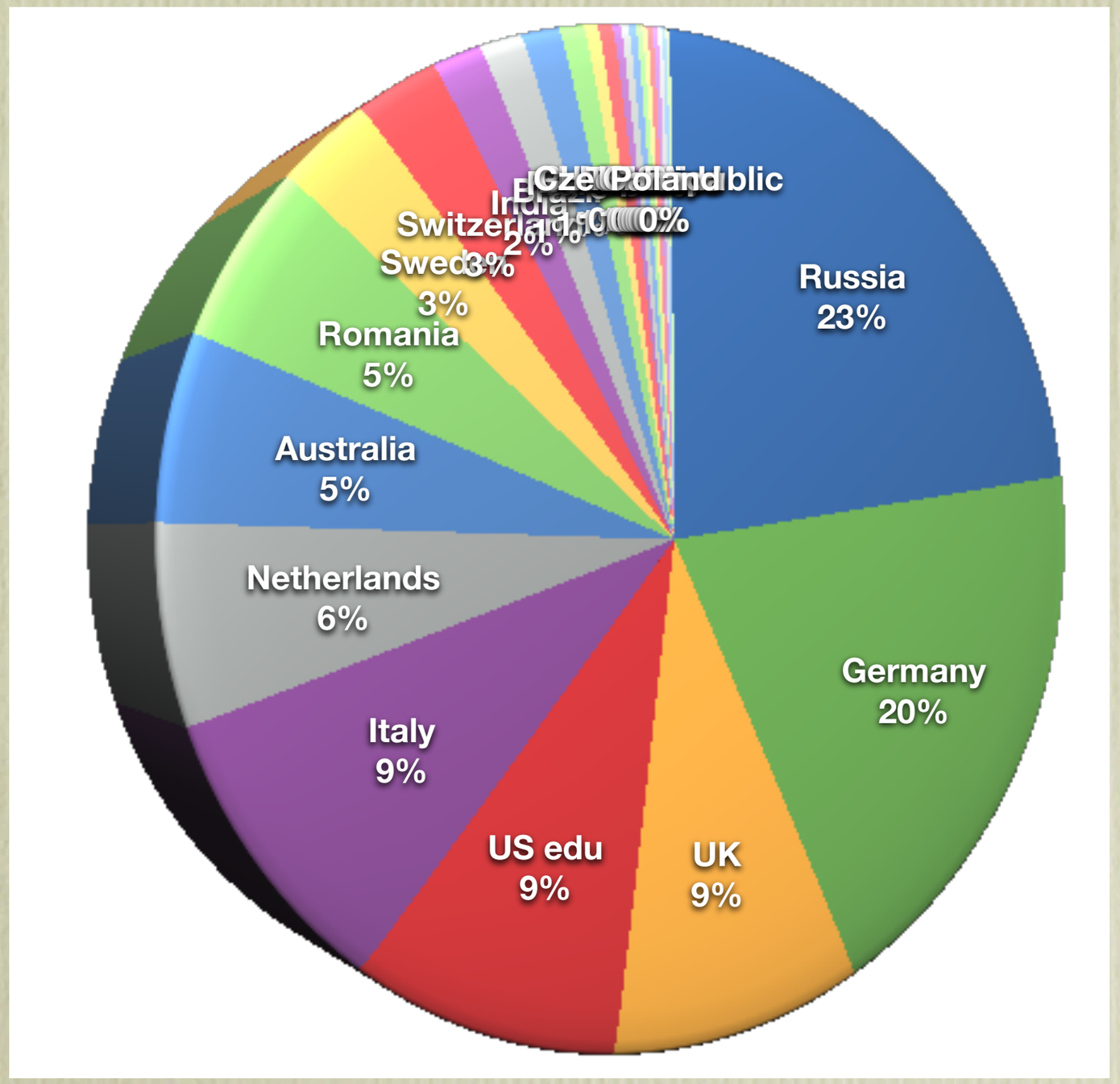
Element	HE1337+0012	HE0400-2030	CS22960-053	CS22949-037	CS29528-041
			Object		
log-e(Li)	2.18			-0.3	1.71
[Be/Fe]	0.87				
[C/Fe]	0.49	1.14	2.05	0.97	1.59
[N/Fe]	1.42	2.75	3.06	2.16	3.07
[O/Fe]	0.73			1.96	<1.4
[Na/Fe]	-0.06	0.71		1.45	0.66
[Mg/Fe]	0.37	0.62	0.65	1.47	0.4
[Al/Fe]	-0.52			0.48	-0.85
[Si/Fe]				0.56	-0.2
[S/Fe]	0.45			1.78	
[K/Fe]				0.23	
[Ca/Fe]	0.46	0.18	0.43	0.31	0.4
[Sc/Fe]		0.32	0.49	0.12	0.26
[Ti/Fe]	0.38	0.27	0.54	0.27	0.4
[V/Fe]				0.09	
[Cr/Fe]	-0.18	-0.08	-0.23	-0.54	-0.17
[Mn/Fe]	-0.7			-0.97	-0.5
[Fe/H]	-3.37	-1.73	-3.14	-3.79	-3.06
[Co/Fe]	0.47			0.42	
[Ni/Fe]	0.01	-0.1		-0.26	
[Cu/Fe]	-0.95			-0.78	
[Zn/Fe]	0.41	-0.2		0.66	
[Sr/Fe]	0.08			0.18	-0.2
[Y/Fe]				-0.07	
[Ba/Fe]	-0.25	1.64	0.86	-0.66	0.97
[Sm/Fe]				1.14	
[Eu/Fe]				0.04	
Atmosphere	**HE1337+0012**	**HE0400-2030**	**CS22960-053**	**CS22949-037**	**CS29528-041**
Teff	6270	5600	5200	4915	6170
logg	4.4	3.5	2.1	1.7	4



World Wide Access to the SAGA database

access from overseas in 2010

Countries in which the number of file access are larger than 30 in 2010 except for Japan.
It is 1,327 for Australia. Thank you for continuing to use the database! (cf. Japan: 76,439)



More Data to Come!

- Remove metallicity limit of [Fe/H]=-2.5 for stars in MW.
  - Thick disk stars and thin disk stars.
- Stars in Dwarf Spheroidal Galaxies in the Local Group
  - Compilation is ongoing.
  - Almost 100 selected papers dealing with local dSph
    - 21 papers with high-resolution spectroscopy
    - 24 papers with low- and intermediate-resolution spectroscopy
    - 10 papers dealing with AGB stars in dSph
  - 235 stars observed with high-res. spectra will be included in the database soon.
  - >>1,000 stars for low- and med-res. spectra.

Another Database project has started!

The Nuclear EoS Database “EOSDB”

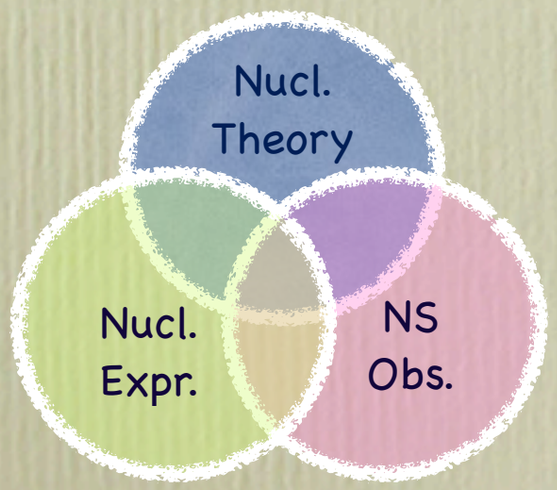
Please check our website and visit C. Ishizuka’s poster

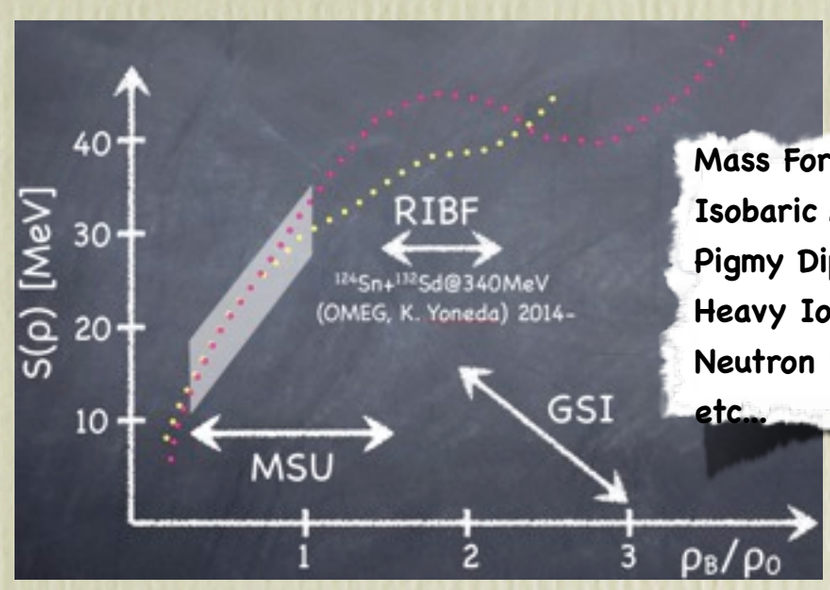
URL: asphwww.ph.noda.tus.ac.jp/eos/

E-mail: eosdb@asph.ph.noda.tus.ac.jp

You can enjoy almost the same functions as SAGA like search, plot and data comparison on the web by using EOSDB. It helps you to compare EoS’s properties such as thermodynamic behaviors or symmetric energy as a function of baryon density etc.

- sym. E and its slope L, incompressibility
- thermodynamic variables
- saturation energy & density
- neutron star max. mass
- each EoS’s theo./expr./obs. background
- invalidity evaluation of each method





The aim of EOSDB is to share the raw data and background information on nuclear equation of state between Nuclear physics and Astronomy & Astrophysics because there are hundreds of articles about EoS published in this decade.

Acknowledgements

I am grateful to the following collaborators who have helped me with compiling data, writing scripts, and giving me suggestions.

- Jun Hidaka (NAOJ)
- Wako Aoki (NAOJ)
- Yutaka Katsuta (Hokkaido University)
- Shimako Yamada (Hokkaido University)
- Masayuki Y. Fujimoto (Hokkaido University)