

NuDat

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National Nuclear Data Center

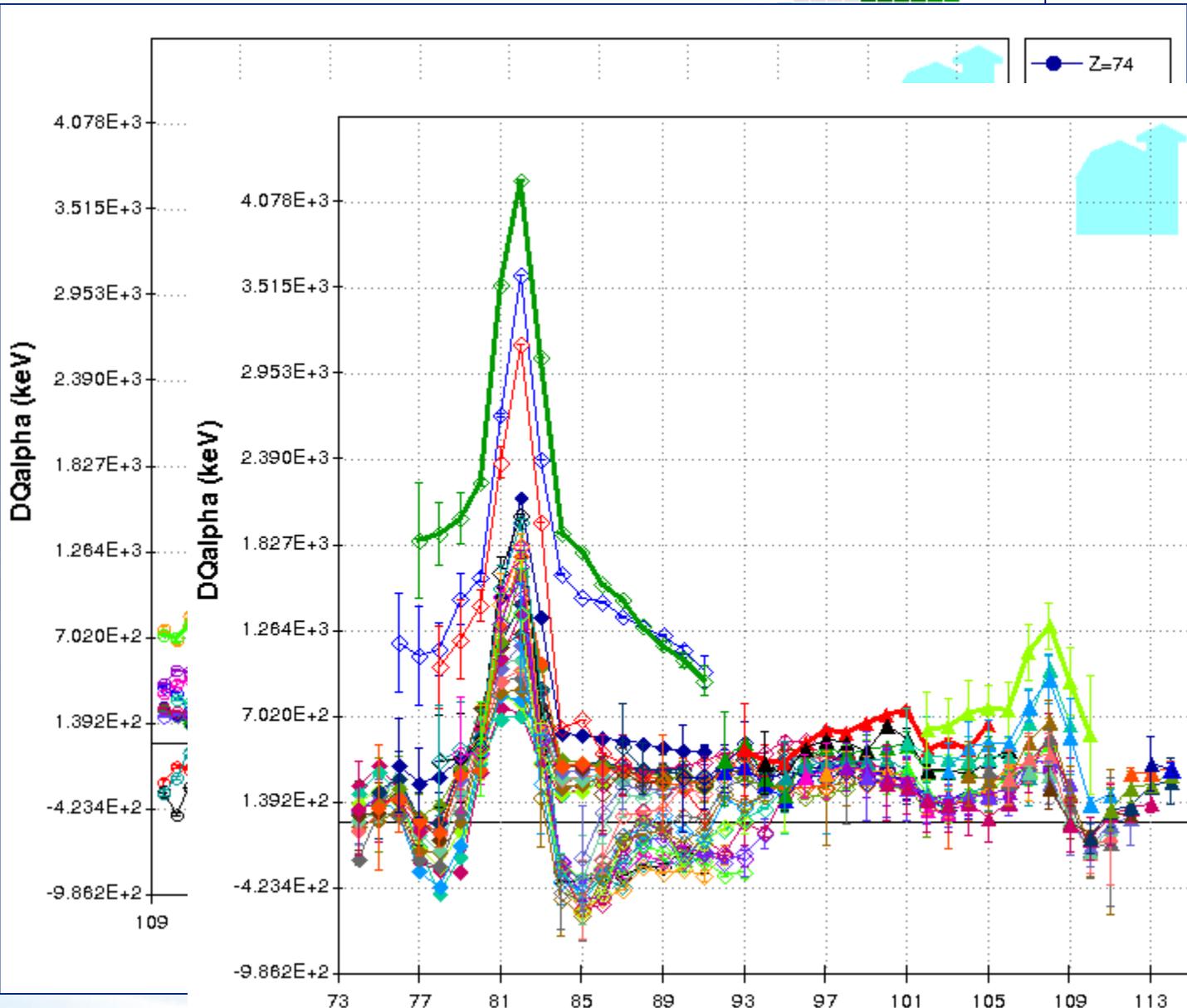
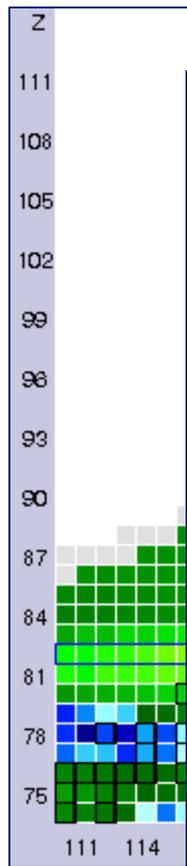


U.S. DEPARTMENT OF
ENERGY

Office of
Science

NuDat 2.7 β was released last Thursday!

- Using AME 2016. Note that Qcalc also has AME 2016.
- Two new coloring possibilities, ΔQ_α and Pairing gap.
- J vs E* plots.
- Projections of the chart on the N and Z axis.
- Access to the data.



- N=110
- N=113
- N=116
- N=119
- N=122
- N=125
- N=126
- N=128
- N=131
- N=134
- N=137
- N=140
- N=143
- N=146
- N=149
- N=152
- N=155
- N=158
- N=161
- N=162
- N=164
- N=167
- N=170
- N=173

NuDat 2.7β

Levels and Gammas Search
Ground and excited states (energy, $T_{1/2}$,

Nuclear Wallet Cards Search
Latest Ground and isomeric

Decay Radiation Search
Radiation type, energy,

Max. Level Energy=5488.60

Levels joined by γ 's

Branching Ratio

Min. Thickness=1.00

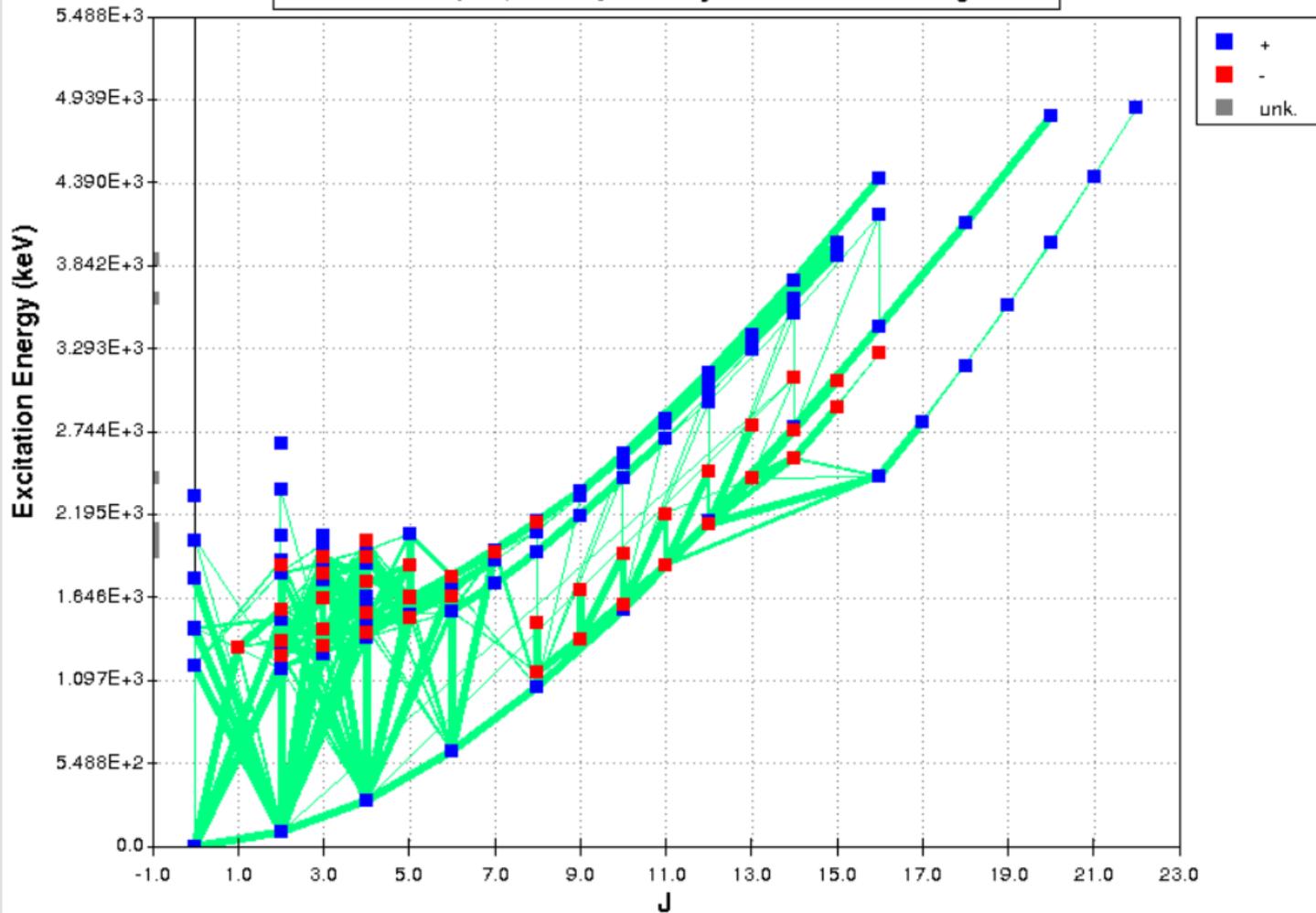
Max. Thickness=5.00

Plot

Reset

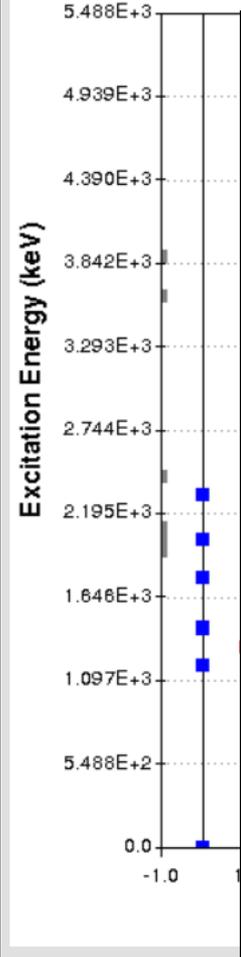
Search and d
Color
Q
Z
73
72
71
70

178Hf J vs E* plot, levels joined by Gammas branching ratios



Max. Level Energy=5488.60 Levels joined by γ 's BE1(W.u) Min. Thickness=1.00 Max. Thickness=5.00 Plot Reset

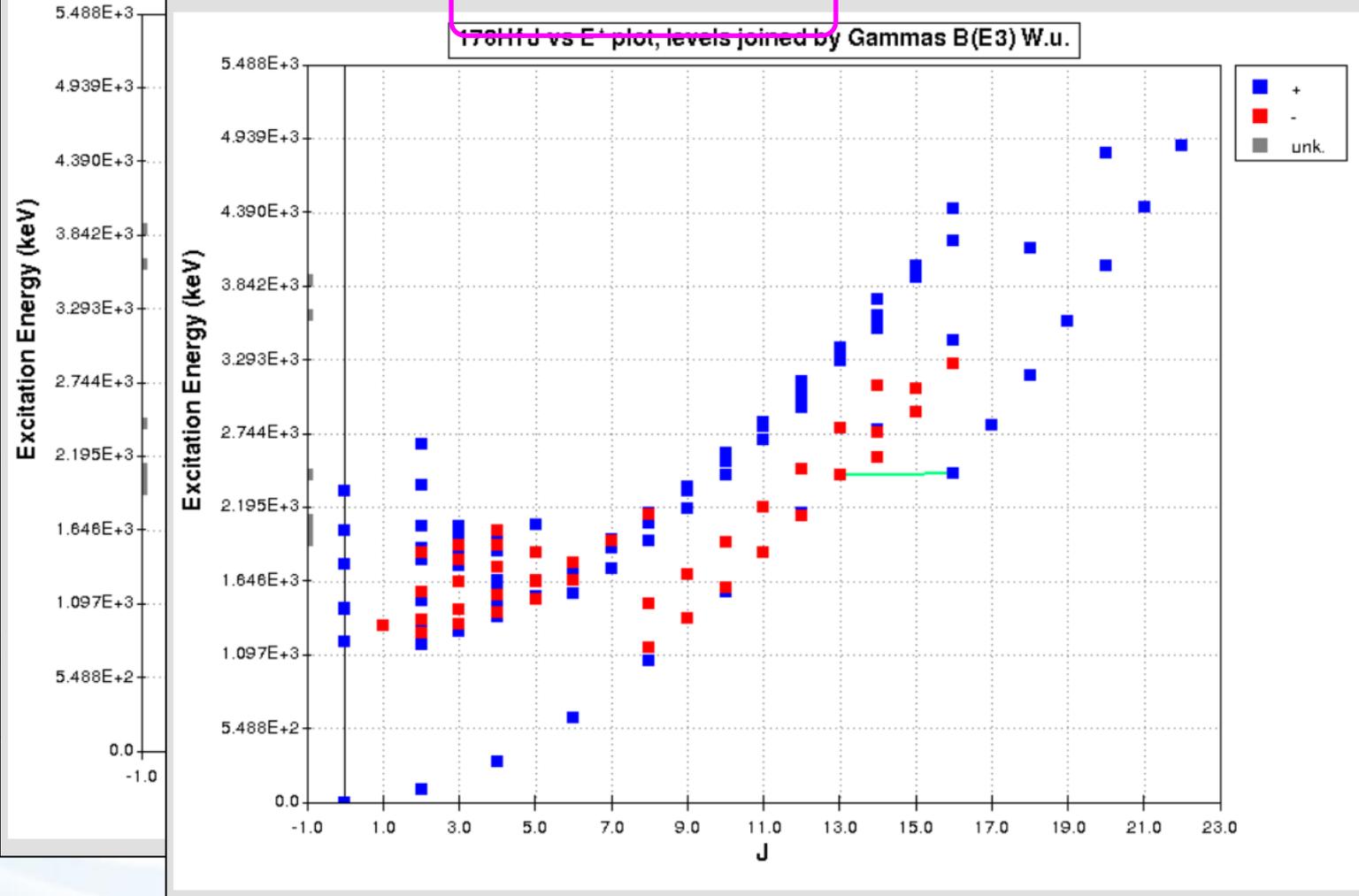
178Hf J vs E⁺ plot, levels joined by Gammas B(E1) W.u.



Max. Level Energy=5488.60 Levels joined by γ 's BE2(W.u) Min. Thickness=1.00 Max. Thickness=5.00 Plot Reset

178Hf J vs E⁺ plot, levels joined by Gammas B(E3) W.u.

Max. Level Energy=5488.60 Levels joined by γ 's BE3(W.u) Min. Thickness=1.00 Max. Thickness=2.00 Plot Reset



RadList on the web

www.nndc.bnl.gov/radlist.jsp

Please enter

Please

```

137BA 137CS B- DEC
137BA H TYP=ERRSAUT=J
137BA H TYP=ERRSAUT=J
137BA H TYP=FULSAUT=H
137BA2 H CUT=1-Oct-200
137BA c Measured: E(
137BA2c shape of the
137BA3c longitudinal
137BA4c (1977We04,197
137BA c 1996Bi23, 199
137BA cG 199
137BA2cG from the 661
137BA cG 200
137BA2cG |a(K)exp(127
137BAxcG {+137}Cs)=30
137BA cG 200
137BA2cG photo-ionizat
137BA3cG Other: 2006Ha
137BA cL J Add
137CS P 0.0
137BA N 1.0
137BA PN
137BA L 0.0
137BA B 1176 15
137BAS B EAV=416.26 8
137BA cB E frd
137BA cB IB$from 100-1
137BA2cB Others: 5.45
137BA3cB 6.0 {I5} (19
        
```

Parent Nucleus	Parent E(level)	Parent J π	Parent T $_{1/2}$	Decay Mode	GS-GS Q-value (keV)
$^{137}_{55}\text{Cs}$	0.0	7/2+	30.08 Y 9	B-: 100 %	1175.63 17

Energy Balance (keV)	
Gammas	563.1 13
X-Rays	2.30 4
β minus	187.1 9
β plus	0
Conversion Electrons	60.3 7
Auger electrons	0.477 10
Neutrinos	361.9 17
Recoil	0
Neutrons	0
Protons	0
Alphas	0
Sum	1175.2 24
Q-effective	1175.63 17
Missing Energy	0 AP
Ratio	0 % AP

At the moment,
providing
limited atomic
radiation data.

Radiation Type	Energy (keV)	Absolute Intensity
γ XR L	4.47	0.91 4
γ XR ka2	31.817	1.99 5
γ XR ka1	32.194	3.64 10
γ XR kb3	36.304	0.348 9
γ XR kb1	36.378	0.672 18
γ XR kb2	37.255	0.213 6
γ 1	283.5 1	5.8E-4 8
γ 2	661.657 3	85.10 20
e Auger L	3.67	7.40 10
e Auger K	26.4	0.78 3
e CE K ₂	624.216 3	7.79 11
e CE L ₂	655.668 3	1.402 20

But can be expanded to a fuller
listing, available since 2010

Radiation Type	Energy (keV)	Absolute Intensity	
γ Other L XRs	4.0 4	0.055 5	
γ L α XR	4.5 5	0.45 5	
γ L β XR	4.9 4	0.37 3	
γ L γ XR	5.6 5	0.056 5	
γ K-L2 (K _{α2) XR}	31.8 3	2.02 20	
γ K-L3 (K _{α1) XR}	32.2 3	3.7 4	
γ K	e CK MMX	0.113 4	6.04 23
γ K	e CK LLX	0.343 16	1.28 6
γ K	e Auger MXY	0.56 3	14.9 7
γ K	e Auger LMM	3.57 17	5.5 3
γ K	e Auger LMX	4.34 15	1.77 6
γ K	e Auger LXY	5.13 20	0.139 5
γ K	e Auger KLL	26.3 19	0.49 4
γ K	e Auger K LX	31.0 13	0.228 10
γ K	e Auger KXY	35.6 15	0.0252 11

NuDat Statistics

(Database retrievals)

FY14: 2.4 M

FY15: 2.8 M

FY16: 3.2 M

Future Activities:

Expecting new servers in FY18.

Improvements to the list of adopted levels, including comments, will be implemented soon.

Please report any bugs and opportunities for improvement!