

PACE4 version 4.19.2

LISE++ package version 9.2.108

06/14/2011

PACE4 [batch.in] → filename_step00x

Previous page **CARD 2-1** Next page

Projectile	Target	Compound
A = 48 N = 28	A = 124 N = 74	A = 172 N = 102
Z = 20 Ca	Z = 50 Sn	Z = 70 Yb
Spin (gs) = 0	Spin (gs) = 0	
ME (MeV) = -44.214 DB	ME (MeV) = -88.237 DB	ME (MeV) = -59.260 DB

QCN = 0 Q value of reaction [MeV].
If == 0 it is calculated from mass tables.

Beam Energy (MeV)

ELAB_min = 300 Batch Mode

ELAB_max = 390 N of Steps = 20

QCN = -73.191

E_CM = 216.279

Ex = 143.089

EXPSIG = 0 experimental fusion cross section if known. TL-S from optical model shifted to reproduce this value if inputted, preserving the L-diffuseness. if == 0 Bass model (PRL 1977) fusion cross section being used. (only for "classical" mode).

JCMAX = 0 Maximum J to be used during calculations. (if 0 it is taken from optical model routine)

AGRAZ = 4 To bypass input channel optical model routine (TLOM) specify L-diffuseness of fusion cross section. If == 0 diffuseness will be set to 0.5 which is essentially sharp cutoff. (only for "classical" mode)

ELOSS = 0 energy loss of beam thru full target width. (total dE) energies will be distributed between Ebeam & Ebeam-Eloss

LMINN = 0 Lowest partial wave L in calculation. Partial waves from L=0 to LMINN excluded, enabling low-L non-fusion window in reaction calculation.

Transmission probability for a one-dimensional barrier (O.T.)

Classical (use it above the barrier)

Quantum-mechanical [D.Hill & J.Wheeler, PhysRev 89(1953) 1105]

Note: If you are running at high bombarding energies for which the grazing angular momentum is above 75 hbar, it is recommended to input AGRAZ > 0, and to specify an arbitrary value for EXPSIG (or 0 = Bass) which corresponds to a fusion cross section with a limiting L-value around 80. This will give you all the evaporation residue data and the fission probabilities you need. For J>80 all nuclei will fission anyway, and you will run out of dimension if you try.

PACE4 - calculating...

Be patient, I'm working...

Только спокойствие! Всё будет просто замечательно!

Restez calme... Tout va bien!

Excitation Energy = [#09] 33.5 MeV

shows current step in the Batch mode

The code operates under MS Windows environment and provides a highly user-friendly interface. It can be freely downloaded from the following internet addresses:

<http://www.nsci.msu.edu/lise>

- batch
- batch
- batch_step001
- batch_step001
- batch_step002
- batch_step002
- batch_step003
- batch_step003
- batch_step004
- batch_step004
- batch_step005
- batch_step005
- batch_step006
- batch_step006
- batch_step007
- batch_step007
- batch_step008
- batch_step008

```

in                170
rtf               94,208
particles         1,606,052
rtf              107,244
particles         1,754,603
rtf              112,204
particles         1,851,573
rtf              121,202
particles         1,949,429
rtf              128,027
particles         2,060,912
rtf              124,967
particles         2,192,401
rtf              134,066
particles         2,306,423
rtf              124,422
particles         2,391,162
rtf              126,073
    
```

Name	Ext	Size
[.]		<DIR>
[PublishedData]		<DIR>
batch	cs4	637
batch_step001	cs4	927
batch_step002	cs4	985
batch_step003	cs4	1,101
batch_step004	cs4	1,217
batch_step005	cs4	1,246
batch_step006	cs4	1,362
batch_step007	cs4	1,478
batch_step008	cs4	1,622
batch_step009	cs4	637
batch_step010	cs4	753
batch_step011	cs4	782
batch_step012	cs4	898
batch_step013	cs4	782
batch_step014	cs4	869
batch_step015	cs4	956
batch_step016	cs4	810
batch_step017	cs4	956
batch_step018	cs4	927
batch_step019	cs4	1,014
batch_step020	cs4	1,130

The screenshot shows the PACE4 interface with the following parameters for CARD 2.1:

- Projectile:** A = 48, N = 28, Z = 20, Ca, Spin (gs) = 0, ME (MeV) = -44.214
- Target:** A = 124, N = 74, Z = 50, Sn, Spin (gs) = 0, ME (MeV) = -98.237
- Compound:** A = 172, N = 102, Z = 70, Yb, ME (MeV) = -59.260
- Beam Energy (MeV):** ELAB_min = 300, ELAB_max = 390, N of Steps = 20, Batch Mode
- Other parameters:** QCN = 0, QCN = 73.191, E_CM = 216.279, Ex = 143.089

Red arrows point from the 'batch' folder in the top-left and the 'batch_step004' file in the bottom-left to the 'batch' field in the PACE4 interface.