**Library file**

# elt lat z ielement atwt

# alpha b0 b1 b2 b3 alat esub asub

# t0 t1 t2 t3 rozero ibar

'Pt' 'fcc' 12 1 195.080

6.4956062544 4.92 2.20 6.00 2.20 3.9173715678 5.77 0.90

1 3.94 -2.20 3.84 1.00 3

'Mo' 'bcc' 8 1 89.960

5.8381780760 5.95 9.00 3.00 1.00 3.1465589671 6.81 0.61

1 2.00 7.75 -7.00 1.00 3

'V' 'bcc' 8 1 50.942

4.8137039168 4.74 1.00 2.50 1.00 3.0310889132 5.30 0.73

1 3.30 3.20 -2.00 1.00 3

'Ni' 'fcc' 12 1 58.690

5.0842175782 2.56 1.50 6.00 1.50 3.5213917703 4.45 0.94

1 3.10 1.80 4.36 1.00 3

'Cu' 'fcc' 12 1 63.546

5.1548300830 3.83 2.20 6.00 2.20 3.6133156519 3.54 0.94

1 2.72 3.04 1.95 1.00 3

'Al' 'fcc' 12 1 26.982

4.6855976824 3.20 2.60 6.00 2.60 4.0446507884 3.36 1.16

1 3.05 0.51 7.75 1.00 3

'Ti' 'hcp' 12 1 47.880

4.7194566335 2.70 1.00 3.00 1.00 2.9200000000 4.87 0.66

1 6.80 -2.00 -12.00 1.00 3

'Co' 'hcp' 12 1 58.933

5.2356147485 3.50 0.00 0.00 4.00 2.5000000000 4.41 0.90

1 3.00 5.00 -1.00 1.00 3

**MEAM file for the Pt-Al**

rc = 6.0

delr = 0.1

augt1 = 0

erose\_form = 2

ialloy = 2

zbl(1,1) = 0

nn2(1,1) = 1

attrac(1,1) = 0.05

repuls(1,1) = 0.05

Cmin(1,1,1) = 1.53

Cmax(1,1,1) = 2.8

Ec(1,1) = 5.77

re(1,1) = 2.77

zbl(2,2) = 0

nn2(2,2) = 1

attrac(2,2) = 0.05

repuls(2,2) = 0.05

Cmin(2,2,2) = 0.49

Cmax(2,2,2) = 2.8

Ec(2,2) = 3.36

re(2,2) = 2.86

zbl(1,2) = 0

nn2(1,2) = 1

rho0(1) = 1

rho0(2) = 1

Ec(1,2) = 5.8927

re(1,2) = 2.7361

alpha(1,2) = 6.18428472506132

attrac(1,2) = 0.05

repuls(1,2) = 0.05

Cmin(1,1,2) = 0.09

Cmin(2,2,1) = 1.5

Cmin(1,2,1) = 0.94

Cmin(1,2,2) = 0.11

Cmin(2,1,1) = 0.94

Cmin(2,1,2) = 0.11

Cmax(1,1,2) = 2

Cmax(2,2,1) = 2.8

Cmax(1,2,1) = 2

Cmax(1,2,2) = 1.44

Cmax(2,1,1) = 2

Cmax(2,1,2) = 1.44

lattce(1,2) = 'l12'

**MEAM file for the Pt-Co**

rc = 4.5

delr = 0.1

augt1 = 0

erose\_form = 2

ialloy = 2

zbl(1,1) = 0

nn2(1,1) = 1

attrac(1,1) = 0.05

repuls(1,1) = 0.05

Cmin(1,1,1) = 1.53

Cmax(1,1,1) = 2.8

Ec(1,1) = 5.77

re(1,1) = 2.77

zbl(2,2) = 0

nn2(2,2) = 1

attrac(2,2) = 0

repuls(2,2) = 0

Cmin(2,2,2) = 0.49

Cmax(2,2,2) = 2

Ec(2,2) = 4.41

re(2,2) = 2.5

zbl(1,2) = 0

nn2(1,2) = 1

rho0(1) = 1

rho0(2) = 1

Ec(1,2) = 5.57

re(1,2) = 2.727

alpha(1,2) = 6.03709800893984

attrac(1,2) = 0.0375

repuls(1,2) = 0.0375

Cmin(1,1,2) = 1.53

Cmin(2,2,1) = 0.49

Cmin(1,2,1) = 2.3

Cmin(1,2,2) = 2.4

Cmin(2,1,1) = 2.3

Cmin(2,1,2) = 2.4

Cmax(1,1,2) = 2.8

Cmax(2,2,1) = 2.8

Cmax(1,2,1) = 2.8

Cmax(1,2,2) = 2.8

Cmax(2,1,1) = 2.8

Cmax(2,1,2) = 2.8

lattce(1,2) = 'l12'

**MEAM file for the Cu-Pt**

rc = 4.5

delr = 0.1

augt1 = 0

erose\_form = 2

ialloy = 2

zbl(1,1) = 0

nn2(1,1) = 1

attrac(1,1) = 0.05

repuls(1,1) = 0.05

Cmin(1,1,1) = 1.21

Cmax(1,1,1) = 2.8

Ec(1,1) = 3.54

re(1,1) = 2.555

zbl(2,2) = 0

nn2(2,2) = 1

attrac(2,2) = 0.05

repuls(2,2) = 0.05

Cmin(2,2,2) = 1.53

Cmax(2,2,2) = 2.8

Ec(2,2) = 5.77

re(2,2) = 2.77

zbl(1,2) = 0

nn2(1,2) = 1

rho0(1) = 1

rho0(2) = 1

Ec(1,2) = 4.2089

re(1,2) = 2.62

alpha(1,2) = 5.19382395573785

attrac(1,2) = 0.05

repuls(1,2) = 0.05

Cmin(1,1,2) = 1.21

Cmin(2,2,1) = 1.53

Cmin(1,2,1) = 1.365312428

Cmin(1,2,2) = 1.365312428

Cmin(2,1,1) = 1.365312428

Cmin(2,1,2) = 1.365312428

Cmax(1,1,2) = 2.8

Cmax(2,2,1) = 2.8

Cmax(1,2,1) = 2.8

Cmax(1,2,2) = 2.8

Cmax(2,1,1) = 2.8

Cmax(2,1,2) = 2.8

lattce(1,2) = 'l12'

**MEAM file for the Pt-Mo**

rc = 4.5

delr = 0.1

augt1 = 0

erose\_form = 2

ialloy = 2

zbl(1,1) = 0

nn2(1,1) = 1

attrac(1,1) = 0.05

repuls(1,1) = 0.05

Cmin(1,1,1) = 1.53

Cmax(1,1,1) = 2.8

Ec(1,1) = 5.77

re(1,1) = 2.77

zbl(2,2) = 0

nn2(2,2) = 1

attrac(2,2) = 0

repuls(2,2) = 0

Cmin(2,2,2) = 0.82

Cmax(2,2,2) = 2.5

Ec(2,2) = 6.81

re(2,2) = 2.725

zbl(1,2) = 0

nn2(1,2) = 1

rho0(1) = 1

rho0(2) = 1

Ec(1,2) = 6.28

re(1,2) = 2.7584

alpha(1,2) = 5.95350138712197

attrac(1,2) = 0.15

repuls(1,2) = 0.05

Cmin(1,1,2) = 1.75

Cmin(2,2,1) = 1.75

Cmin(1,2,1) = 0.01

Cmin(1,2,2) = 0.09

Cmin(2,1,1) = 0.01

Cmin(2,1,2) = 0.09

Cmax(1,1,2) = 2.8

Cmax(2,2,1) = 3.2

Cmax(1,2,1) = 3.2

Cmax(1,2,2) = 3.4

Cmax(2,1,1) = 3.2

Cmax(2,1,2) = 3.4

lattce(1,2) = 'l12'

**MEAM file for the Ni-Pt**

rc = 4.5

delr = 0.1

augt1 = 0

erose\_form = 2

ialloy = 2

zbl(1,1) = 0

nn2(1,1) = 1

attrac(1,1) = 0.05

repuls(1,1) = 0.05

Cmin(1,1,1) = 0.81

Cmax(1,1,1) = 2.8

Ec(1,1) = 4.45

re(1,1) = 2.49

zbl(2,2) = 0

nn2(2,2) = 1

attrac(2,2) = 0.05

repuls(2,2) = 0.05

Cmin(2,2,2) = 1.53

Cmax(2,2,2) = 2.8

Ec(2,2) = 5.77

re(2,2) = 2.77

zbl(1,2) = 0

nn2(1,2) = 1

rho0(1) = 1

rho0(2) = 1

Ec(1,2) = 4.8926

re(1,2) = 2.5668

alpha(1,2) = 5.32279668527745

attrac(1,2) = 0.05

repuls(1,2) = 0.05

Cmin(1,1,2) = 0.6

Cmin(2,2,1) = 1.53

Cmin(1,2,1) = 0.6

Cmin(1,2,2) = 1.141619259

Cmin(2,1,1) = 0.6

Cmin(2,1,2) = 1.141619259

Cmax(1,1,2) = 2.4

Cmax(2,2,1) = 2.8

Cmax(1,2,1) = 1.44

Cmax(1,2,2) = 2.8

Cmax(2,1,1) = 1.44

Cmax(2,1,2) = 2.8

lattce(1,2) = 'l12'

**MEAM file for the Pt-Ti**

rc = 4.8

delr = 0.1

augt1 = 0

erose\_form = 2

ialloy = 2

zbl(1,1) = 0

nn2(1,1) = 1

attrac(1,1) = 0.05

repuls(1,1) = 0.05

Cmin(1,1,1) = 1.53

Cmax(1,1,1) = 2.8

Ec(1,1) = 5.77

re(1,1) = 2.77

zbl(2,2) = 0

nn2(2,2) = 1

attrac(2,2) = 0

repuls(2,2) = 0

Cmin(2,2,2) = 1

Cmax(2,2,2) = 1.44

Ec(2,2) = 4.87

re(2,2) = 2.92

zbl(1,2) = 0

nn2(1,2) = 1

rho0(1) = 1

rho0(2) = 1

Ec(1,2) = 6.245

re(1,2) = 2.754

alpha(1,2) = 5.43429078220985

attrac(1,2) = 0.025

repuls(1,2) = 0.025

Cmin(1,1,2) = 0.5

Cmin(2,2,1) = 0.9

Cmin(1,2,1) = 1.25

Cmin(1,2,2) = 1.25

Cmin(2,1,1) = 1.25

Cmin(2,1,2) = 1.25

Cmax(1,1,2) = 1.44

Cmax(2,2,1) = 2

Cmax(1,2,1) = 2.8

Cmax(1,2,2) = 2.8

Cmax(2,1,1) = 2.8

Cmax(2,1,2) = 2.8

lattce(1,2) = 'b2'

**MEAM file for the Pt-V**

rc = 4.5

delr = 0.1

augt1 = 0

erose\_form = 2

ialloy = 2

zbl(1,1) = 0

nn2(1,1) = 1

attrac(1,1) = 0.05

repuls(1,1) = 0.05

Cmin(1,1,1) = 1.53

Cmax(1,1,1) = 2.8

Ec(1,1) = 5.77

re(1,1) = 2.77

zbl(2,2) = 0

nn2(2,2) = 1

attrac(2,2) = 0

repuls(2,2) = 0

Cmin(2,2,2) = 0.49

Cmax(2,2,2) = 2.8

Ec(2,2) = 5.3

re(2,2) = 2.625

zbl(1,2) = 0

nn2(1,2) = 1

rho0(1) = 1

rho0(2) = 1

Ec(1,2) = 6.0747

re(1,2) = 2.7327

alpha(1,2) = 6.16722017358565

attrac(1,2) = 0.11

repuls(1,2) = 0.05

Cmin(1,1,2) = 2.4

Cmin(2,2,1) = 1.01

Cmin(1,2,1) = 0.33

Cmin(1,2,2) = 0.66

Cmin(2,1,1) = 0.33

Cmin(2,1,2) = 0.66

Cmax(1,1,2) = 3

Cmax(2,2,1) = 2.38

Cmax(1,2,1) = 1.34

Cmax(1,2,2) = 2.46

Cmax(2,1,1) = 1.34

Cmax(2,1,2) = 2.46

lattce(1,2) = 'l12'