

Supplemental Data Set S1

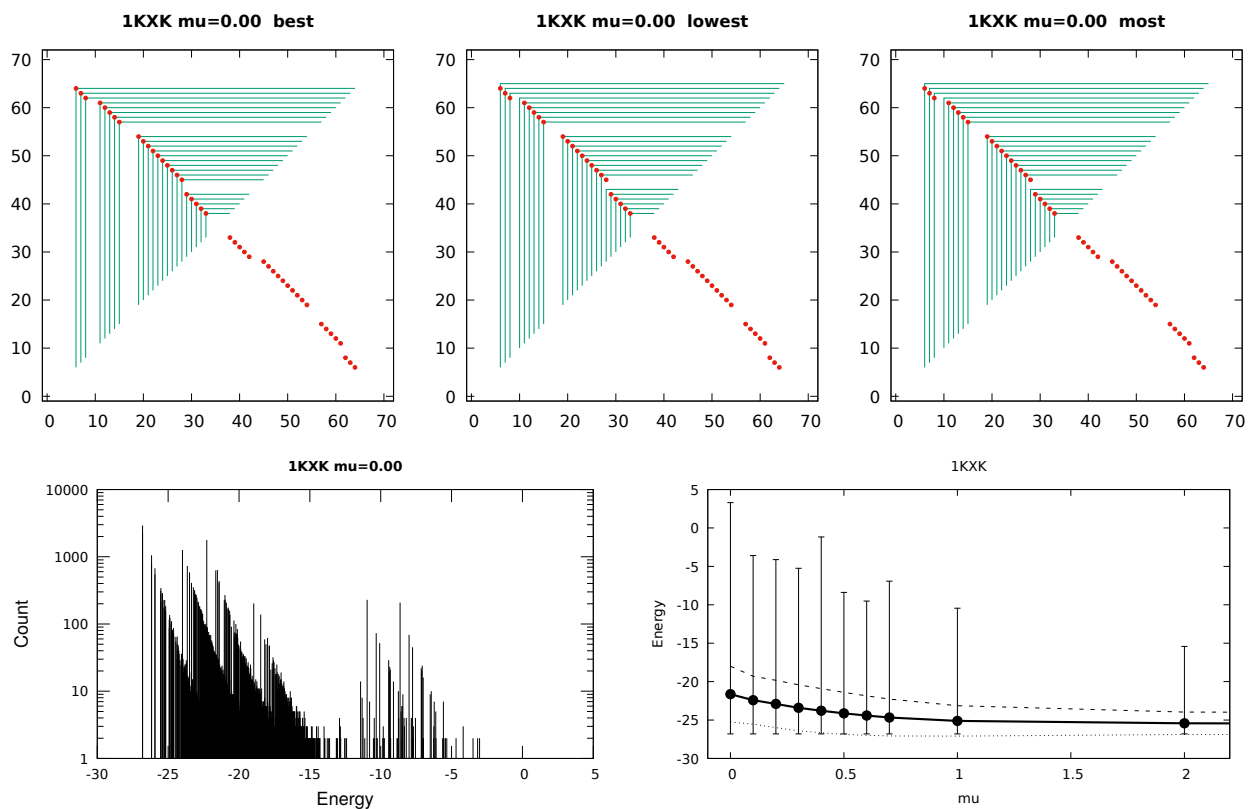
Fold prediction data for all 46 target sequences in the Rzs test set with only secondary interactions listed in Table 3. All numerical values and three structures of relevance are included along with energy spectrum and ensemble energy profile as a function of the chemical potential.

1KXX

GUCUACCUAU CGGGCUAAGG AGCCGUAUGC GAUGAAAGUC GCACGUACGG UUCUAUGCCC
GGGGGAAAAC

mu: 0 mean energy: -21.6296 variance: 13.1897

lowest: -26.807669 most probable(4.873%): -26.807669 best match: -25.294336

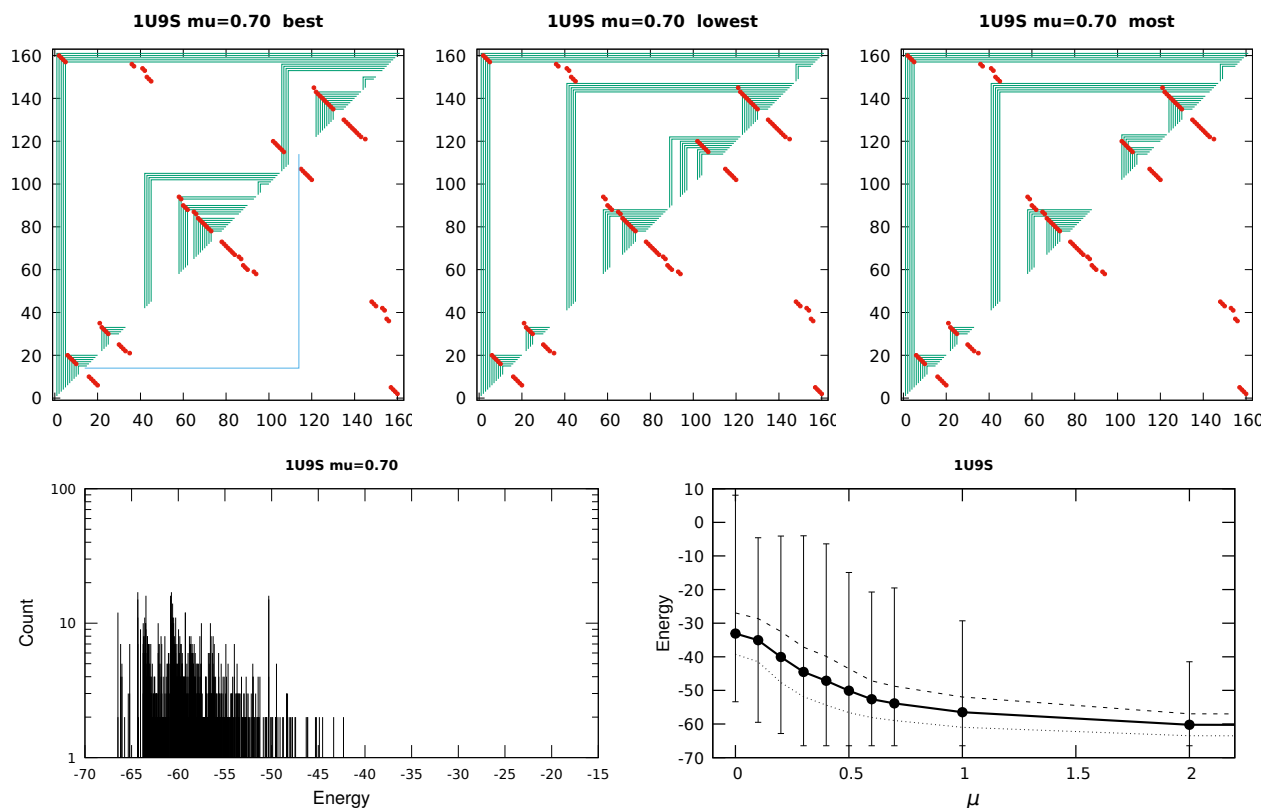


1U9S

```
GGGUGCCAGG UAACGCCUGG GCGGGGUAAC CCGACGGAAG GUGCCACAGA GAAGAGACCG
CCAGCGGCCG GGGCUUCCCC CGGUGCGGGC AAGGGUGAAA CGGCGGGGUA AGAGCCCACC
GCCUGGCCUG GCAACAGGCC GGGGCACGGC AAACCCACC C
```

mu: 0.7 mean energy: -53.8609 variance: 26.0696

lowest: -66.472340 most probable(0.085%): -64.338929 best match: -50.891028

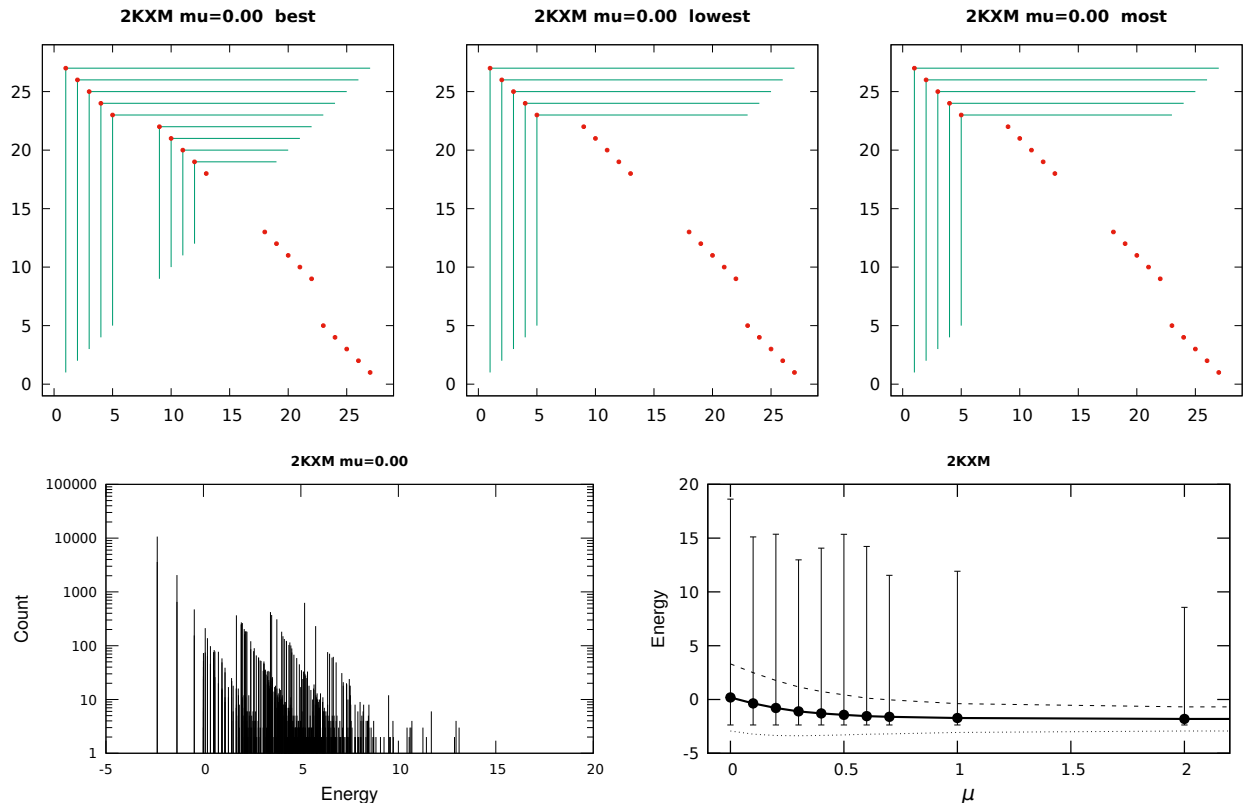


2KXM

GGCUGCUUGU CCUUUAAUGG UCCAGUC

mu: 0 mean energy: 0.188668 variance: 9.71667

lowest: -2.369297 most probable(35.613%): -2.369297 best match: 2.081165

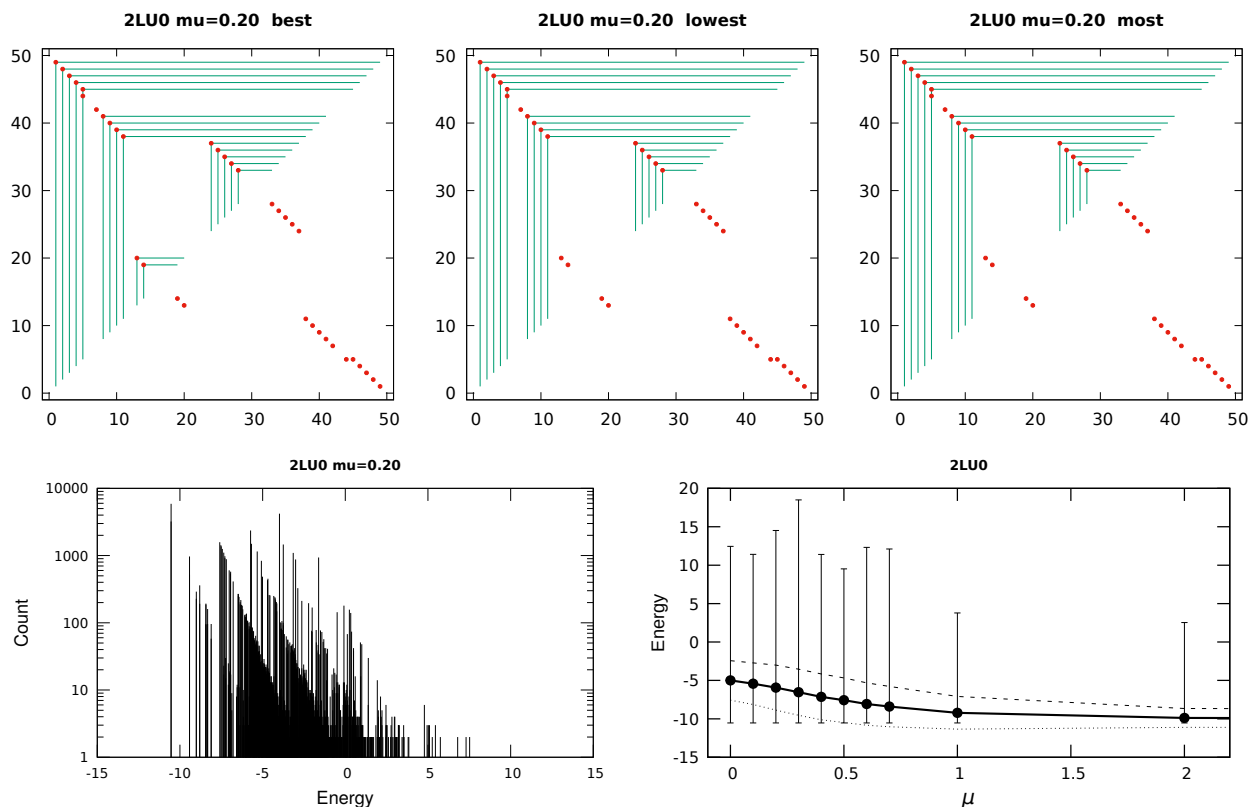


2LU0

GGAAUAUGCU CAACGAAAGU GAAUCAGCUU CGGCUGAGAG CUAAGUUCC

mu: 0.2 mean energy: -5.9367 variance: 8.59137

lowest: -10.538417 most probable(9.803%): -10.538417 best match: -8.110418

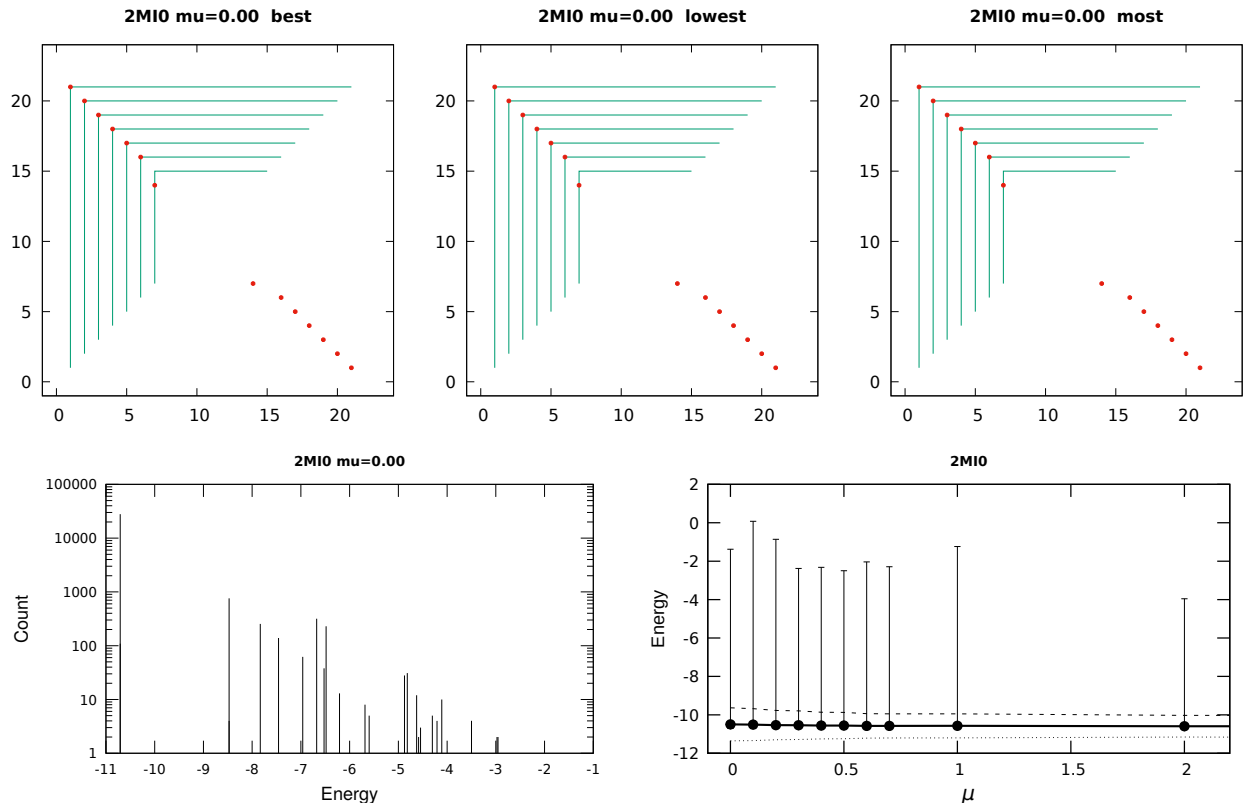


2MI0

GAGCAGCAUC GUCGGCUGCU CA

mu: 0 mean energy: -10.4946 variance: 0.739373

lowest: -10.707835 most probable(93.147%): -10.707835 best match: -10.707835

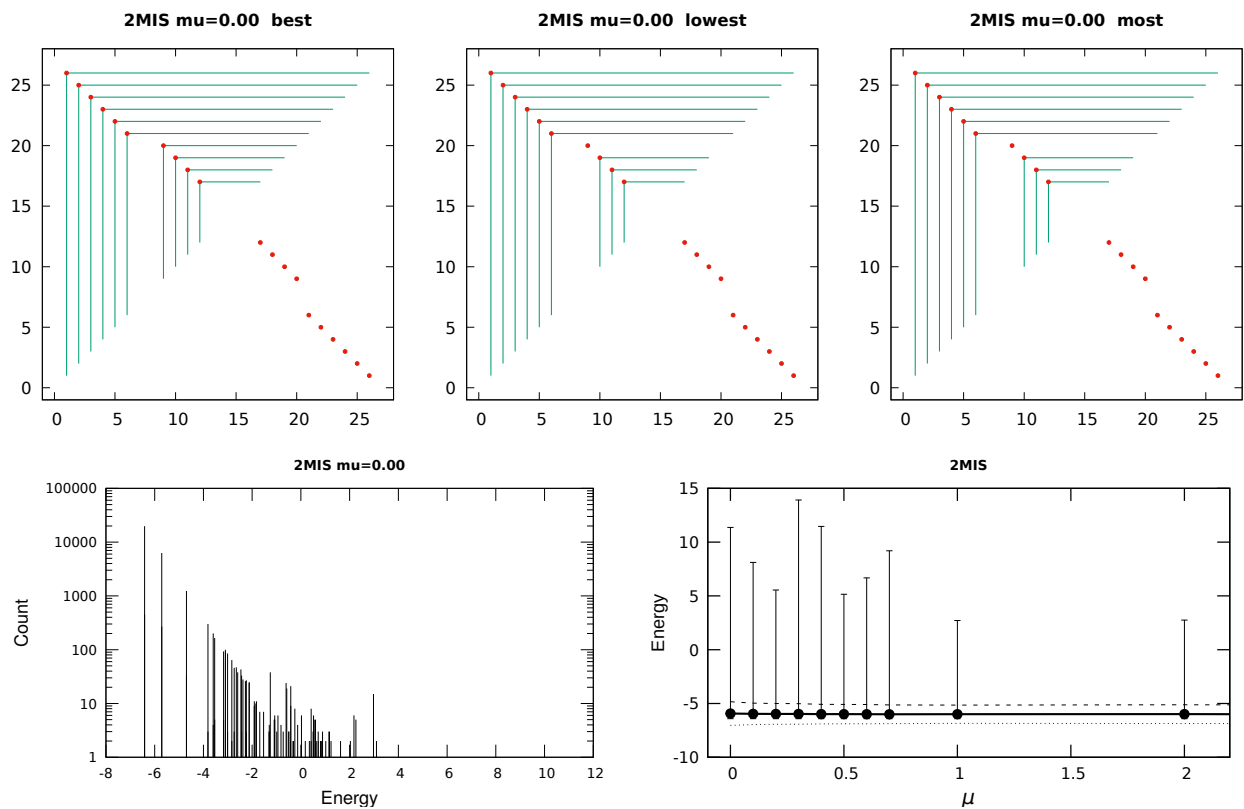


2MIS

GAGCUGCAGC ACGAAAGUGA CGGCUC

mu: 0 mean energy: -5.93606 variance: 1.21131

lowest: -6.413668 most probable(66.117%): -6.413668 best match: -0.817752

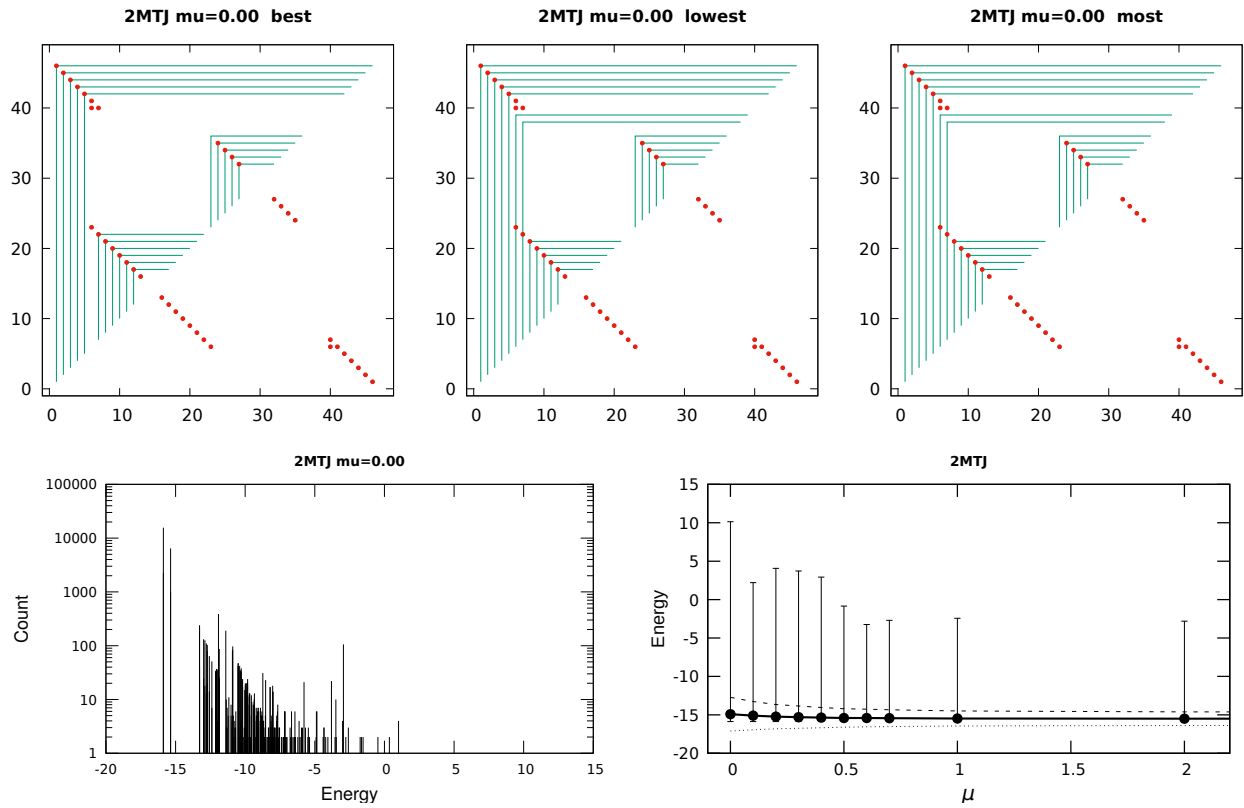


2MTJ

GGACCUCCCG UCCUUGGACG GUCGAGCGAA AGCUUGUGAU UGGUCCG

mu: 0 mean energy: -14.9132 variance: 4.79206

lowest: -15.877167 most probable(52.097%): -15.877167 best match: -9.559252

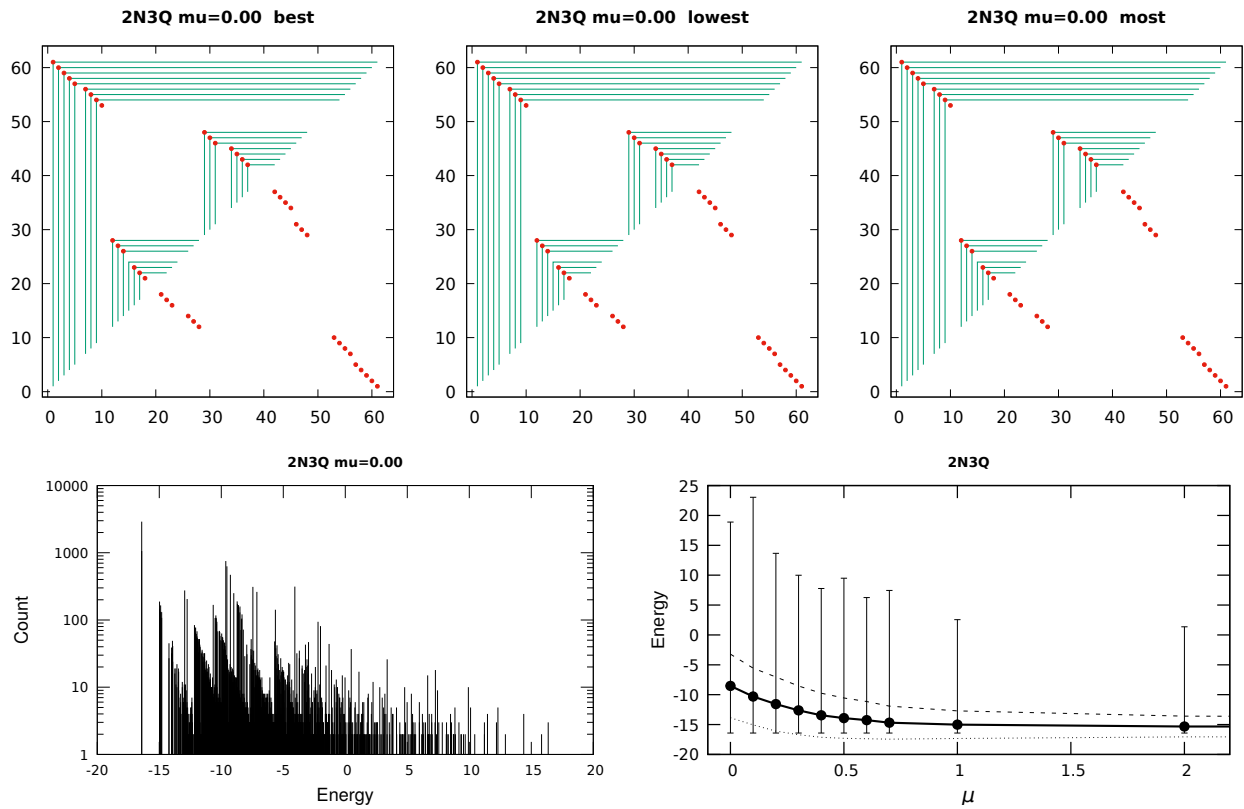


2N3Q

GCAGCAGGGA ACUCACGCUU GCGUAGAGGC UAAGUGCUUC GGCACAGCAC AAGCCCGCUG
CG

mu: 0 mean energy: -8.53294 variance: 28.3178

lowest: -16.414670 most probable(9.673%): -16.414670 best match: -4.840670



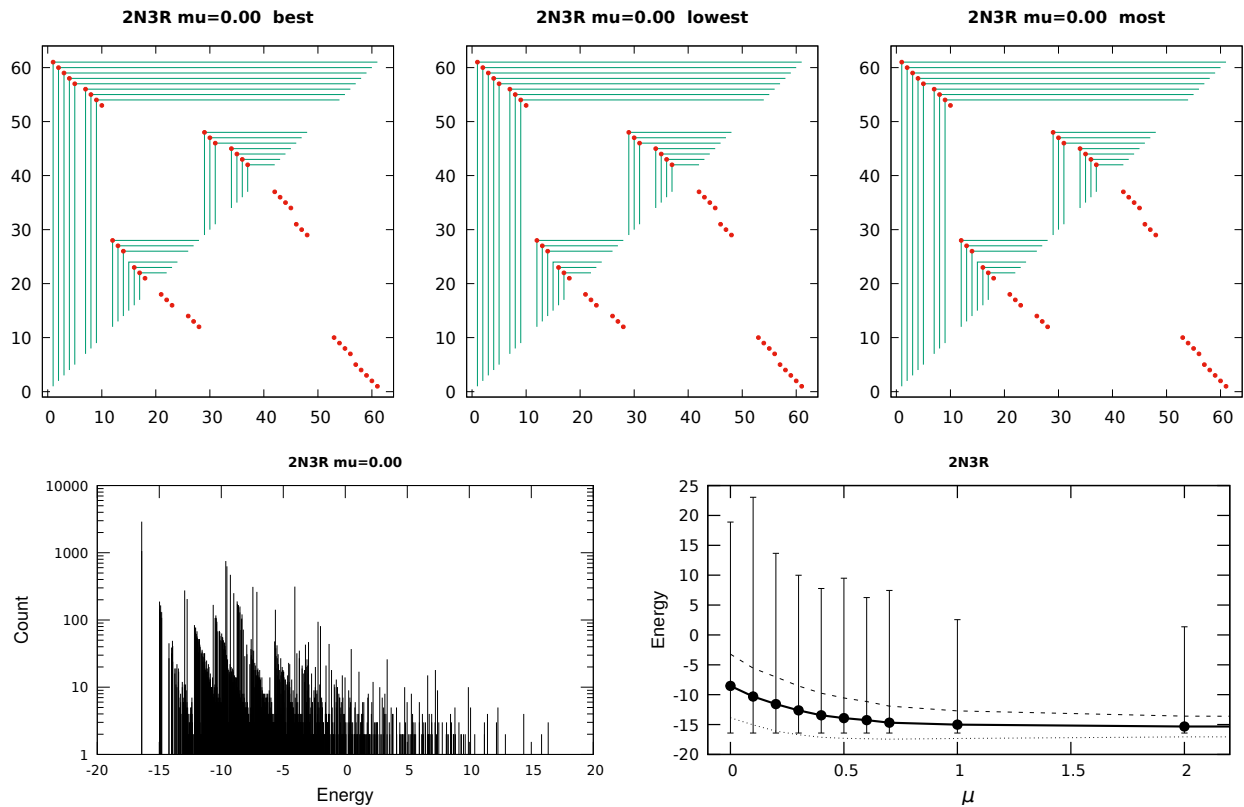
2N3R

GCAGCAGGGA ACUCACGCUU GCGUAGAGGC UAAGUGCUUC GGCACAGCAC AAGCCCGCUG

CG

mu: 0 mean energy: -8.53294 variance: 28.3178

lowest: -16.414670 most probable(9.673%): -16.414670 best match: -4.840670

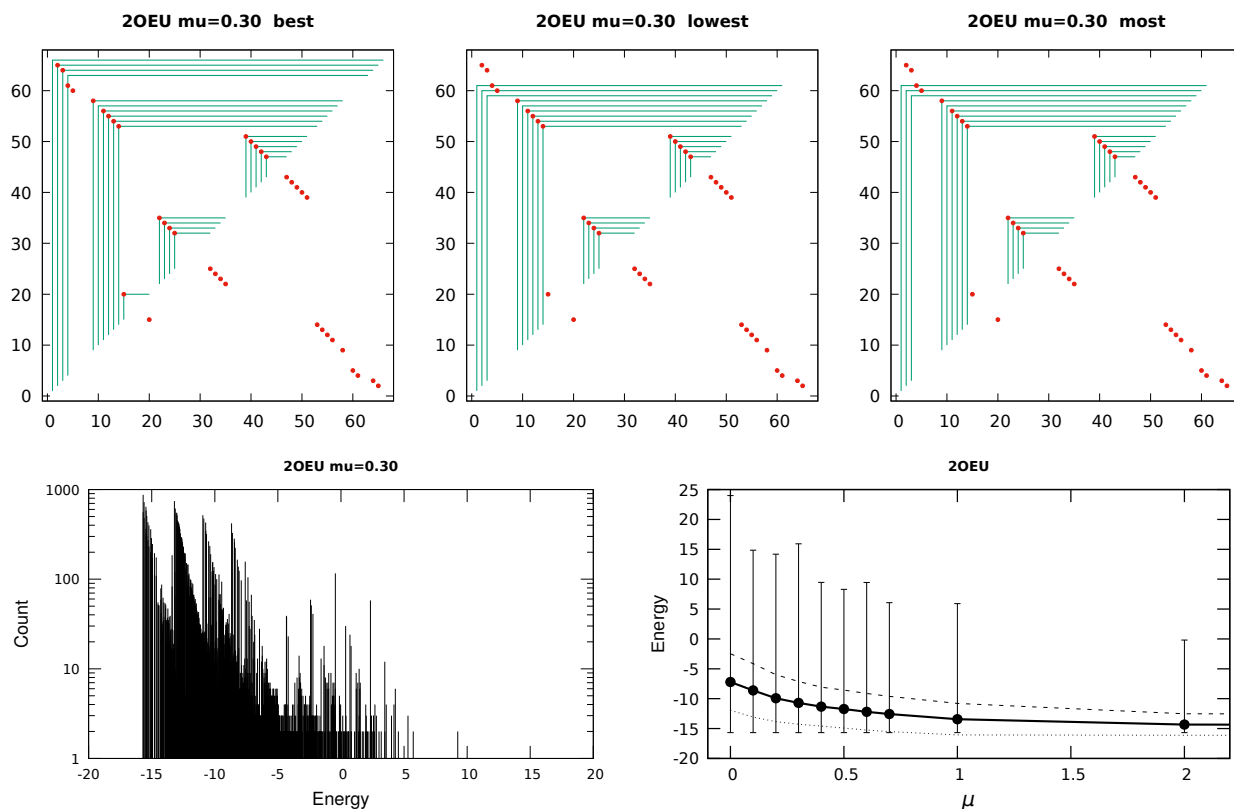


2OEU

GGAUGUACUA CCAGCUGAUG AGUCCCAAU AGGACGAAAC GCCXXXGGCG UCCUGGUAUC
CAAUCC

mu: 0.3 mean energy: -10.7012 variance: 12.757

lowest: -15.677167 most probable(1.457%): -15.677167 best match: -12.304667

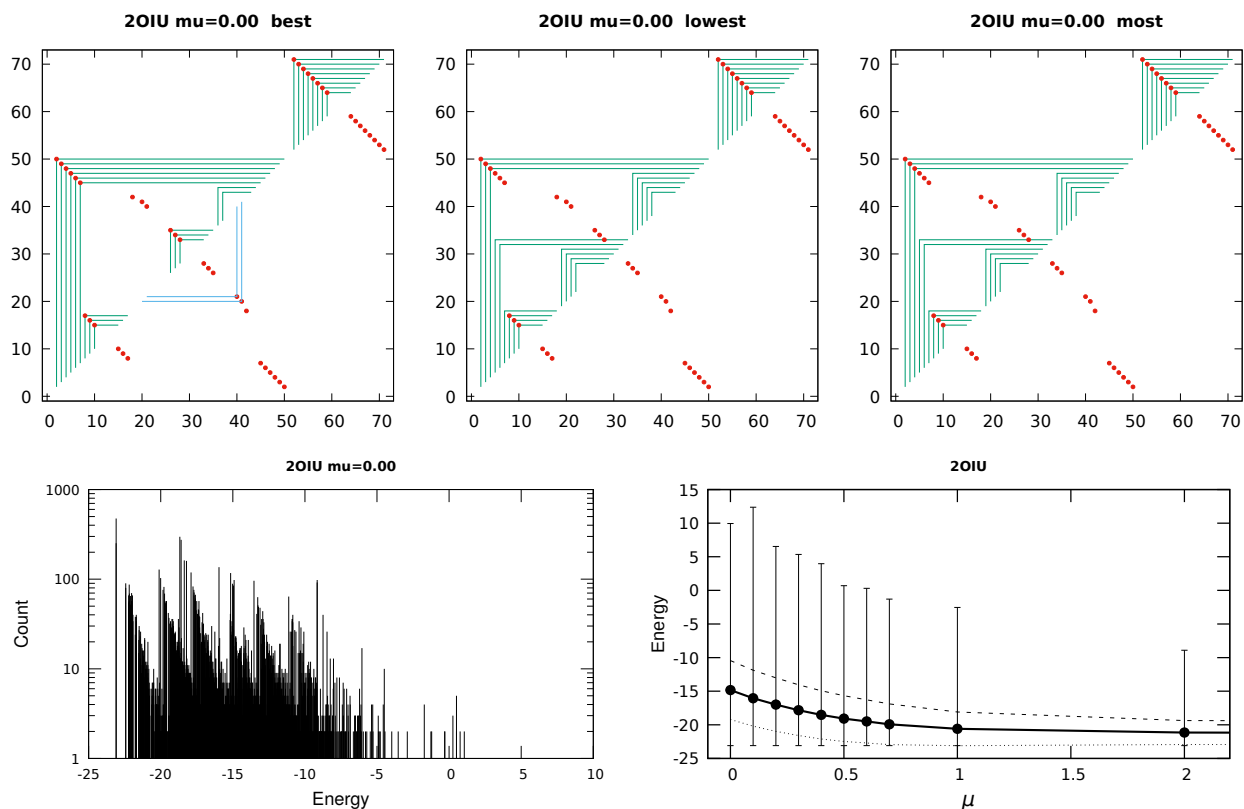


2OIU

GGACCUCGGC GAAAGCCGUU CGACCAGCGA AAGCUCUUAG ACAGGAGGUU AGGUGCUC CG
AAAGGAGCAC U

mu: 0 mean energy: -14.8257 variance: 19.14

lowest: -23.093337 most probable(1.583%): -23.093337 best match: -16.874528

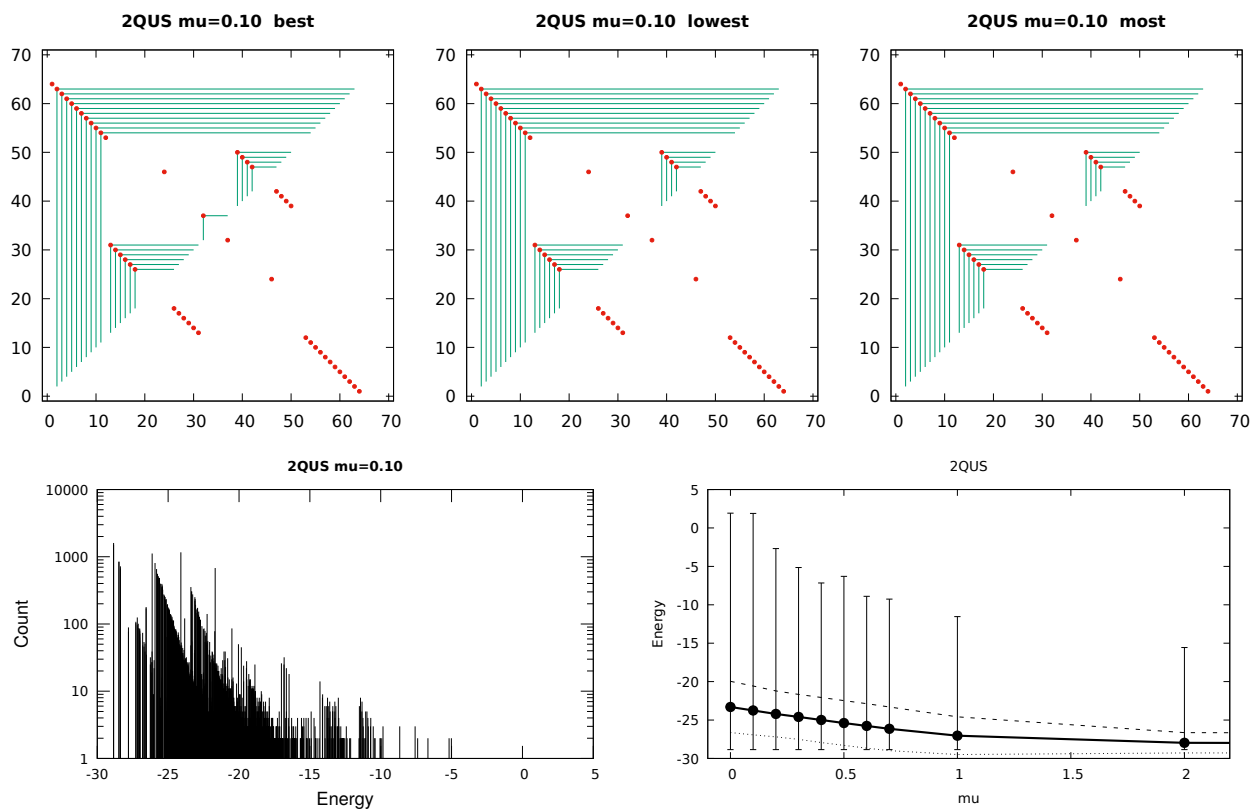


2QUS

XGGAGCCCUG UCACCGGAUG UGCUUCCGG UCUGAUGAGU CCGUGAGGAC AAAACAGGGC
UCCCGAAUU

mu: 0.1 mean energy: -23.7518 variance: 10.0888

lowest: -28.847668 most probable(2.675%): -28.847668 best match: -26.134168

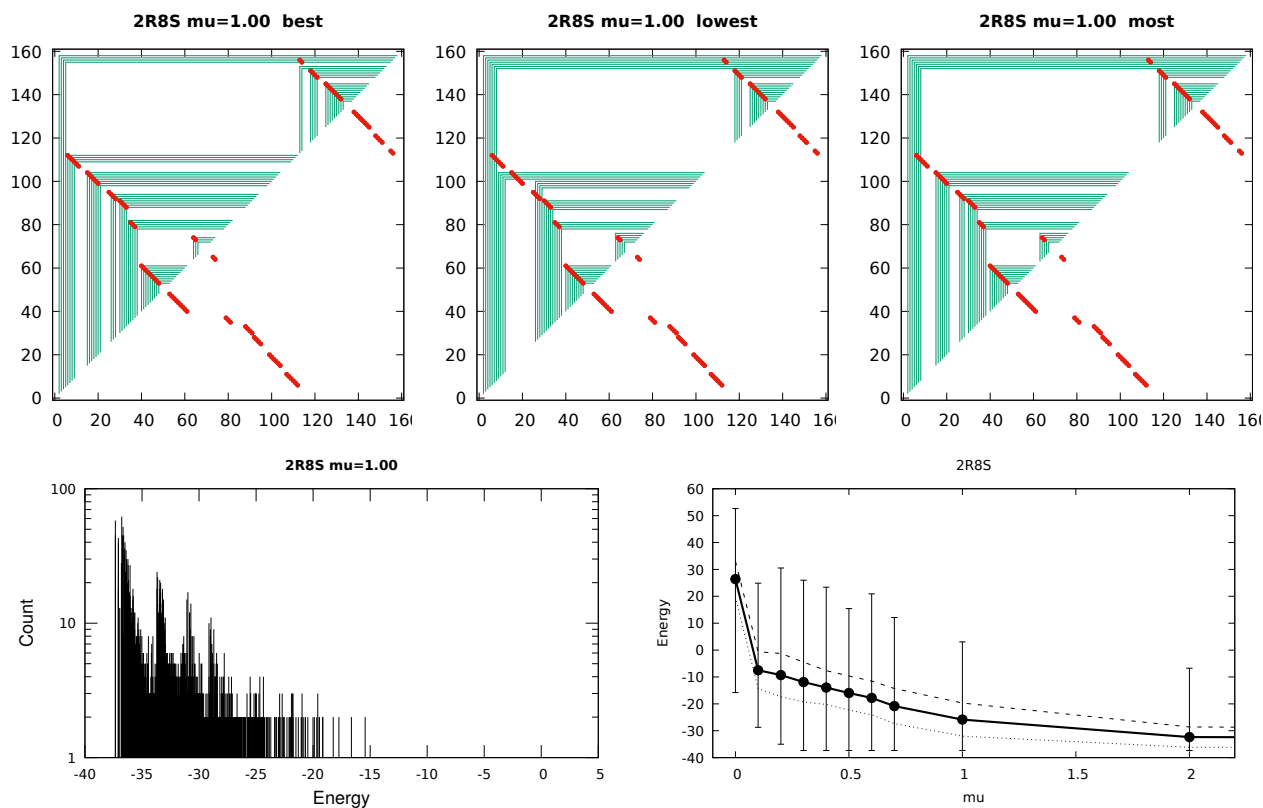


2R8S

GGAAUUGCGG GAAAGGGGUC AACAGCCGUU CAGUACCAAG UCUCAGGGGA AACUUUGAGA
 UGGCCUUGCA AAGGGUAUGG UAAUAAGCUG ACGGACAUGG UCCUAACACG CAGCCAAGUC
 CUAAGUCAAC AGAUCUUCUG UUGAUAUGGA UGCAGUUCA

mu: 1 mean energy: -25.8595 variance: 37.933

lowest: -37.334547 most probable(0.155%): -36.774343 best match: -31.049420

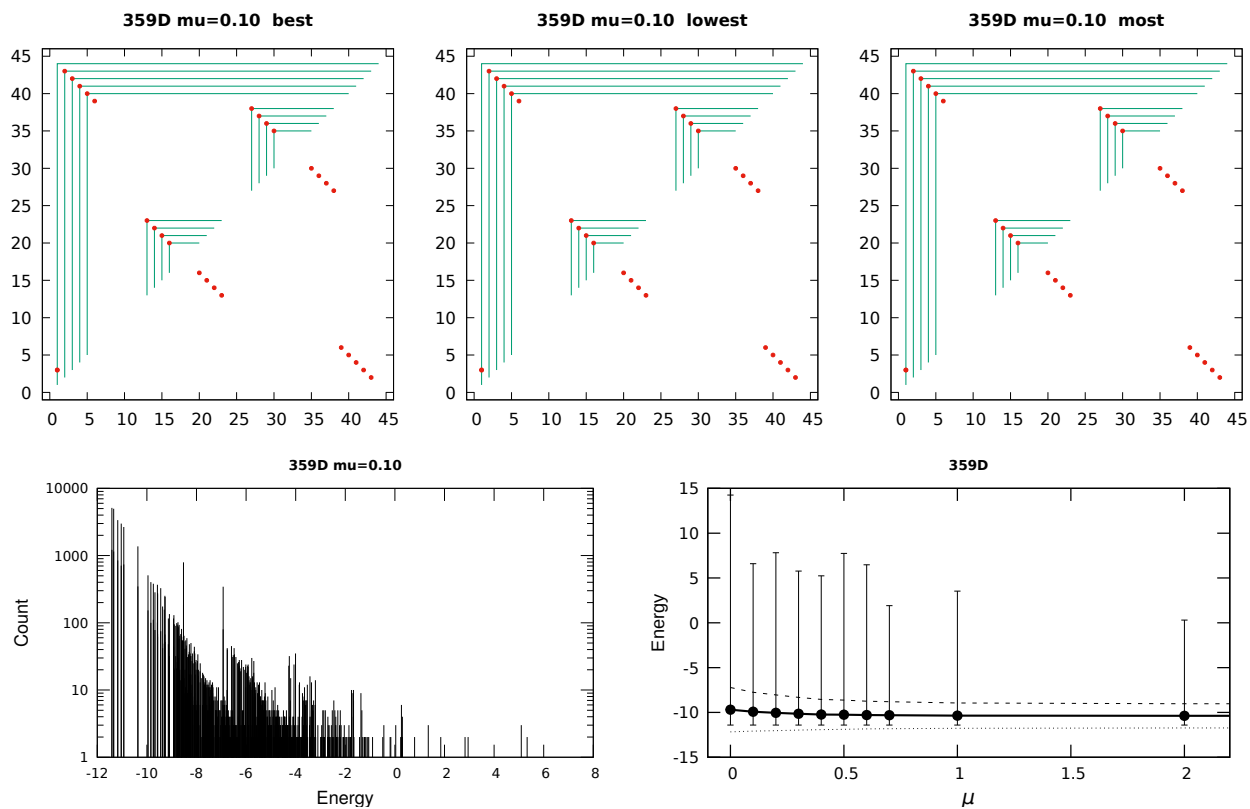


359D

GUGGUCUGAU GAGGCCXXG GCCGAAACUC GUAAGAGUCA CCAC

mu: 0.1 mean energy: -9.91759 variance: 4.6828

lowest: -11.411501 most probable(12.803%): -11.411501 best match: -11.411501

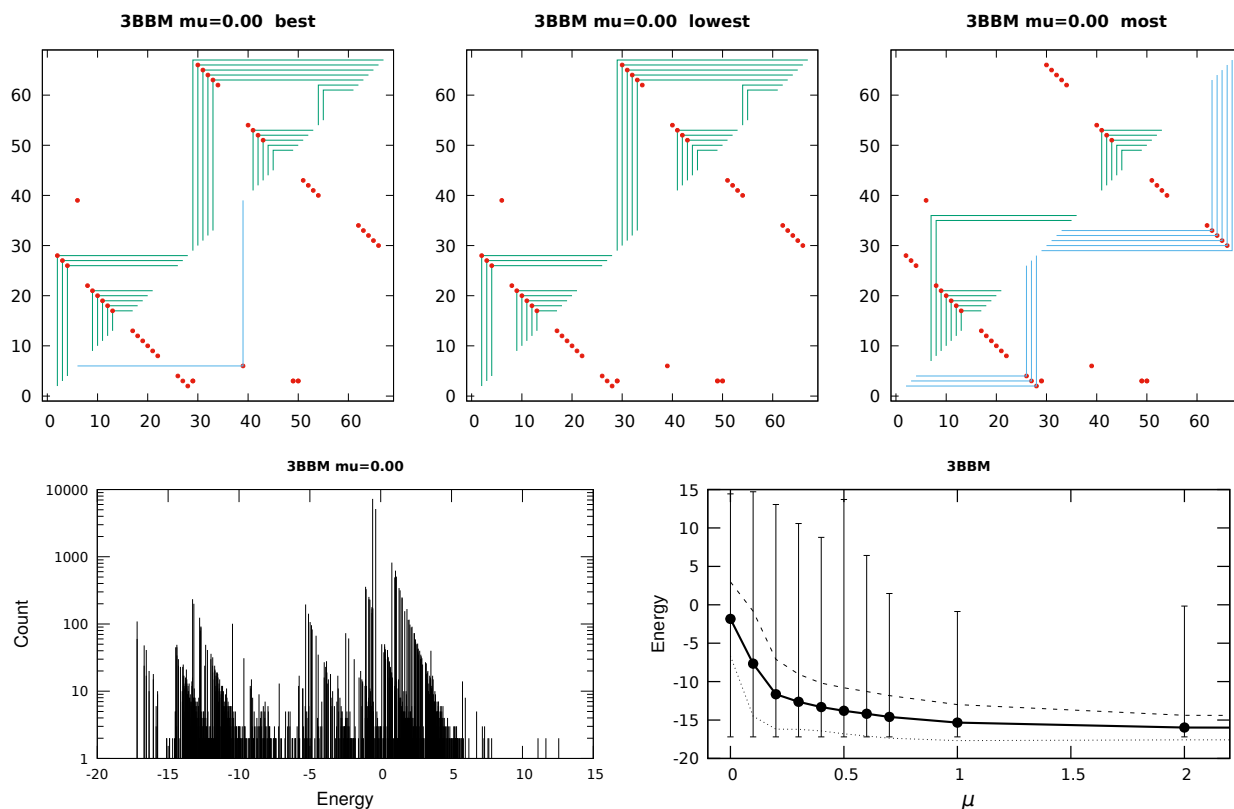


3BBM

UCCCAGUCCA CCGXXXCAGGU GAGAAGGGGG CAGAGAAACA CACGAXXXUC GUGGUCCAUAU
ACCUGCC

mu: 0 mean energy: -1.84 variance: 23.2453

lowest: -17.188501 most probable(24.207%): -0.569544 best match: -13.281001

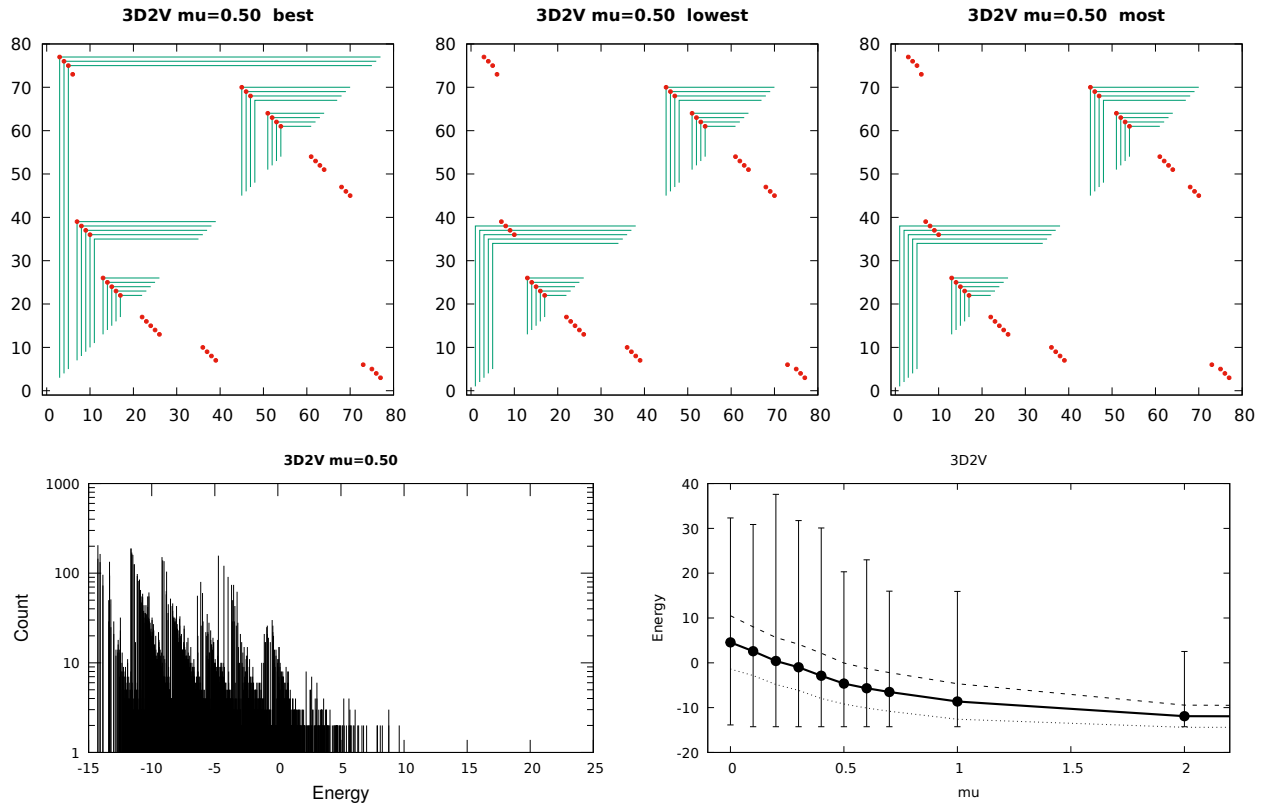


3D2V

GGGACCAGGG GUGCUUGUUC ACAGGCUGAG AAAGUCCCUU UGAACCUGAA CAGGGUAAUG
CCUGCGCAGG GAGUGUCX

mu: 0.5 mean energy: -4.62551 variance: 20.9669

lowest: -14.264488 most probable(0.342%): -14.264488 best match: 10.653330

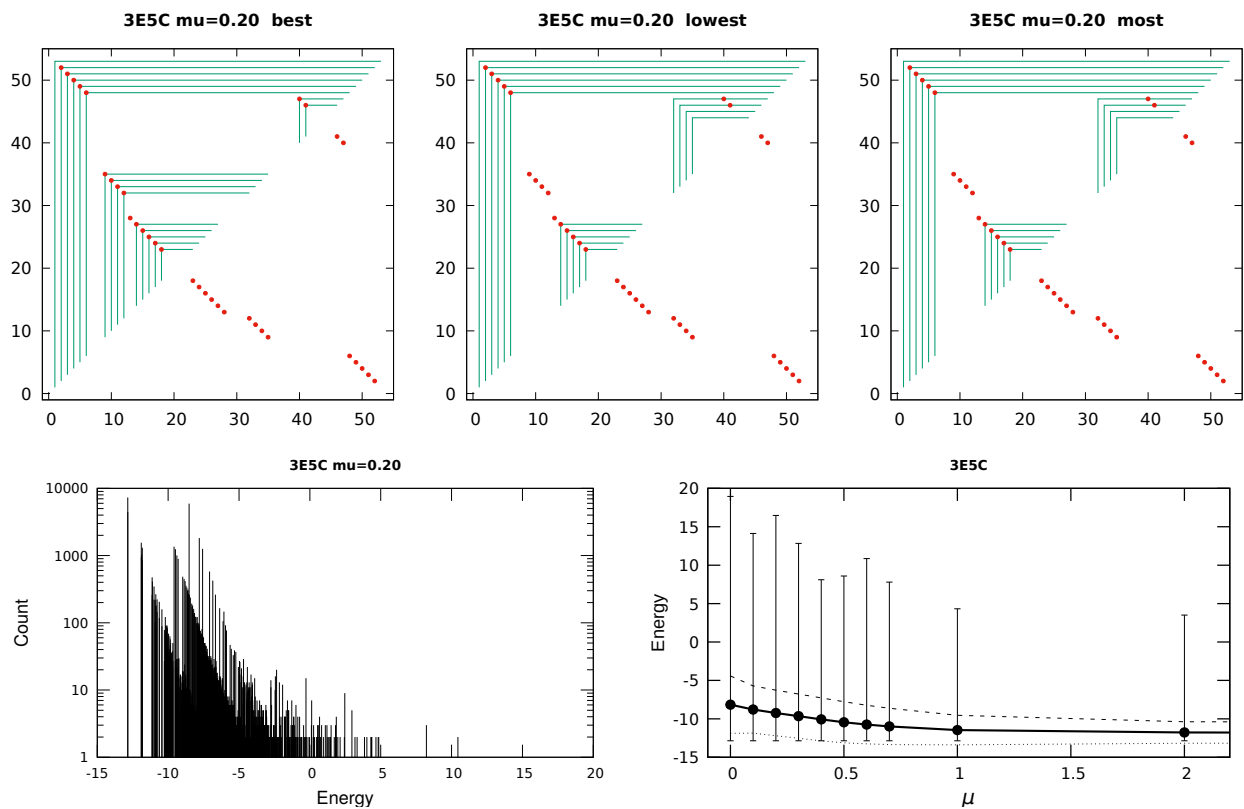


3E5C

GUUCCCGAAA GGAUGGCGGA AACGCCAGAU GCCUUGUAAC CGAAAGGGGG AAU

mu: 0.2 mean energy: -9.23557 variance: 8.78725

lowest: -12.851252 most probable(12.203%): -12.851252 best match: -11.873752

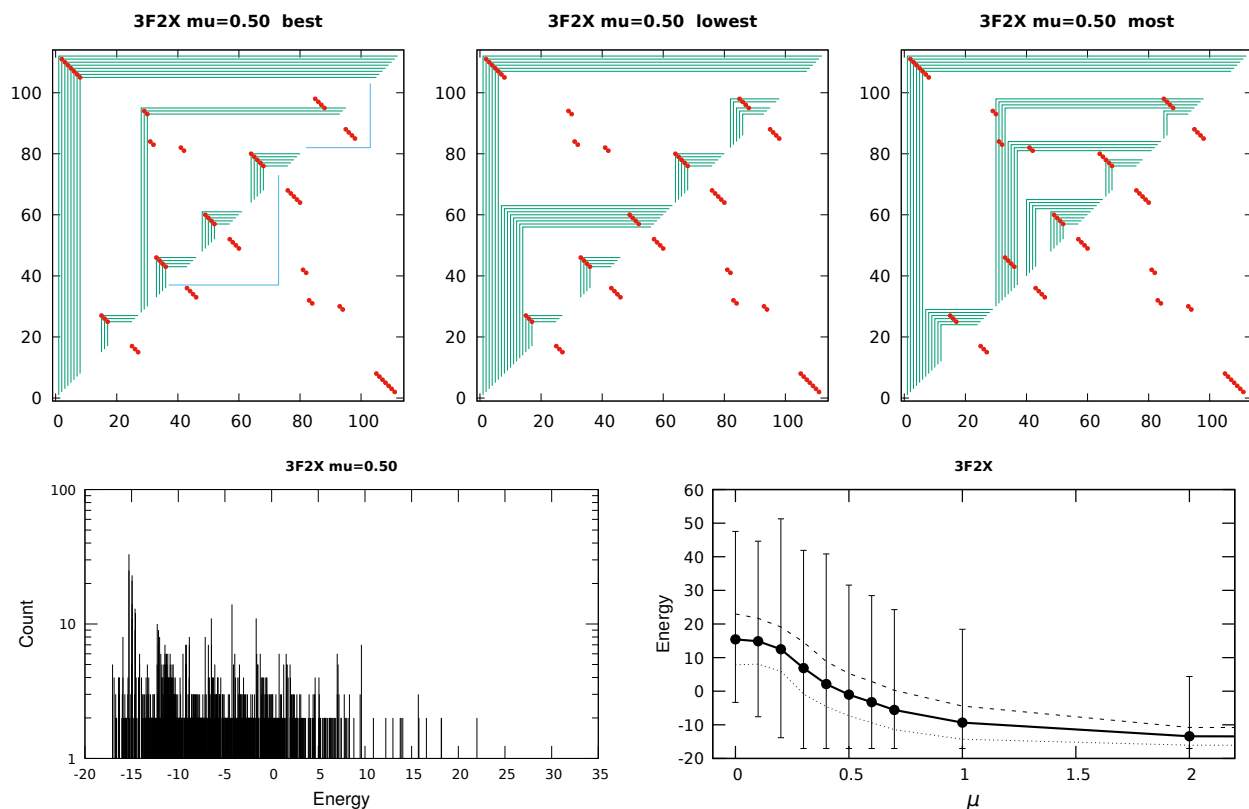


3F2X

GGAUCUUCGG GGCAGGGUGA AAUCCCCGAC CGGUGGUAUA GUCCACGAAA GUAUUUGC UU
UGAUUUGGUG AAUUCACAAA ACCGACAGUA GAGUCUGGAU GAGAGAAGAU UC

mu: 0.5 mean energy: -1.01186 variance: 39.5676

lowest: -17.044985 most probable(0.083%): -15.283752 best match: -6.092651

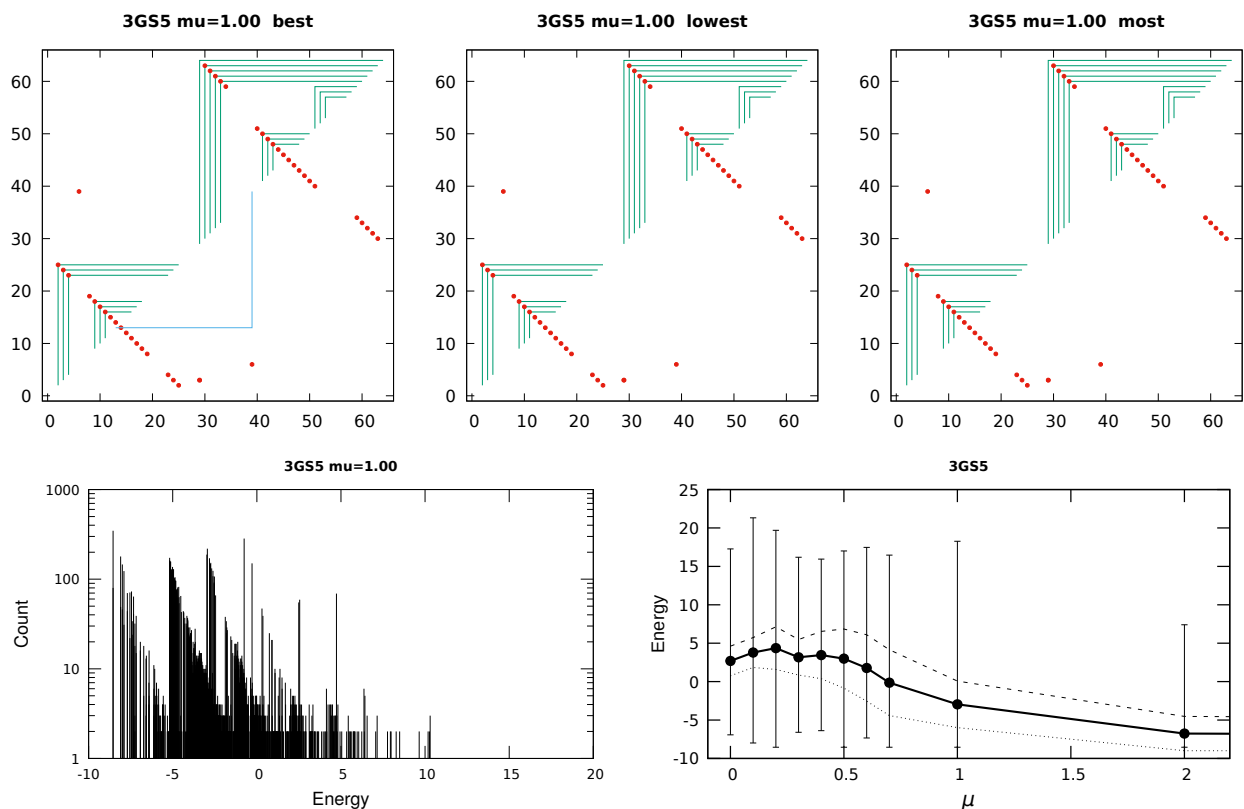


3GS5

UCCCAGUCCA CCGCGGUGAG AAGGGXXXGG CAGAGAAACA CACGAUCGUG GUACAUUACC
UGCC

mu: 1 mean energy: -2.95975 variance: 9.15826

lowest: -8.544336 most probable(1.735%): -8.544336 best match: -2.636836

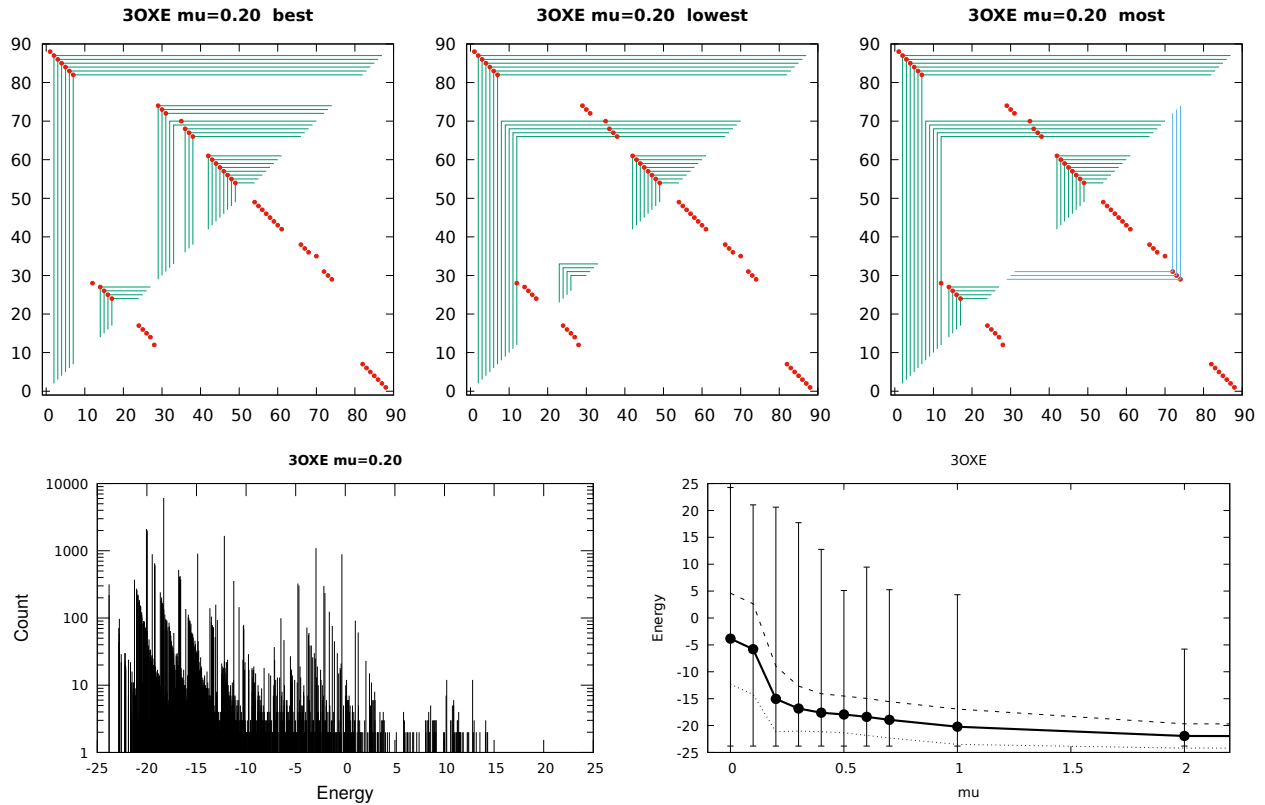


30XE

XGCUCUGGAG AGAACCGUUU AAUCGGUCGC CGAAGGAGCA AGCUCUGCGG AAACGCAGAG
UGAAACUCUC AGGCAAAAGG ACAGAGUX

mu: 0.2 mean energy: -15.0555 variance: 37.1926

lowest: -23.814010 most probable(10.160%): -18.302638 best match: -19.324654

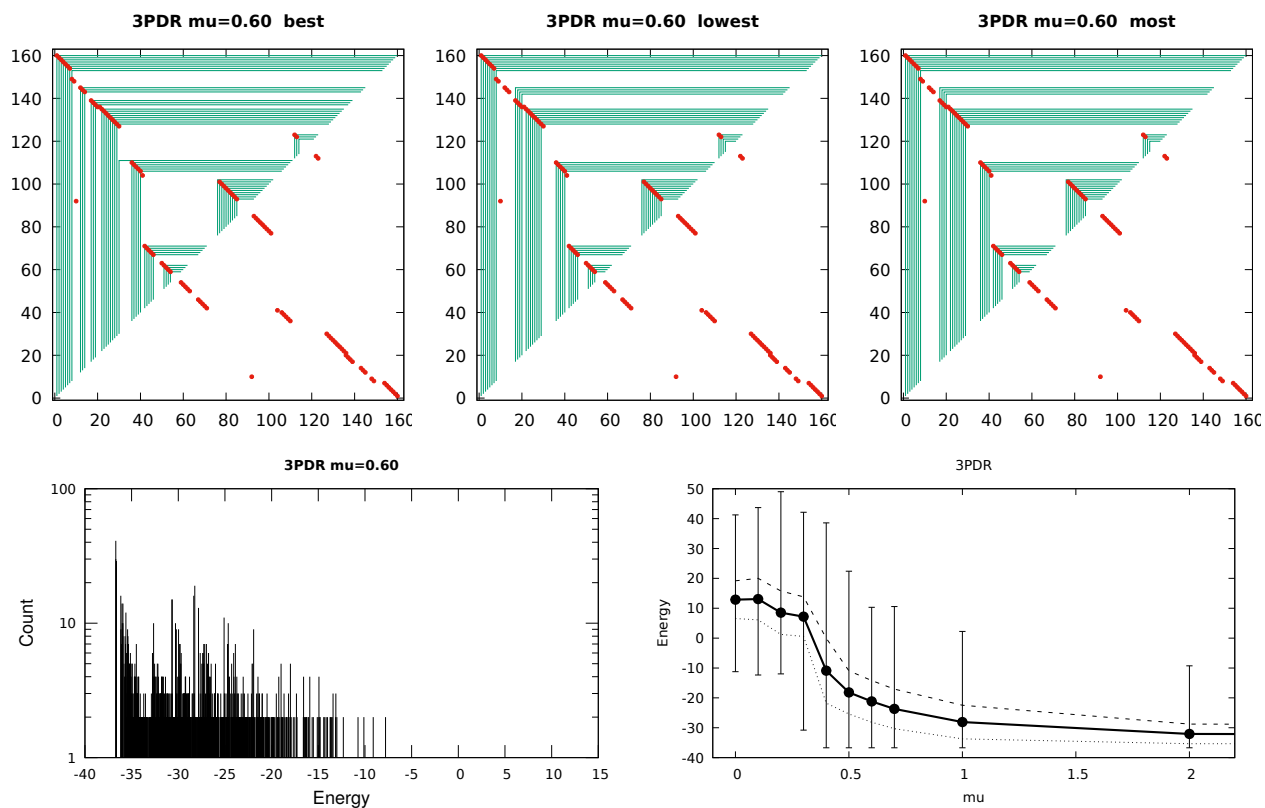


3PDR

GGGCUUCGUU AGGUGAGGCU CCUGUAUGGA GAUACGCUGC UGCCCCAAAA UGUCCAAAGA
 CGCCAAUGGG UCAACAGAAA UCAUCGACAU AAGGUGAUUU UAAUUGCAGC UGGAUGCUUG
 UCCUAUGCCA UACAGUGCUA AAGCUCUACG AUUGAAGCCC A

mu: 0.6 mean energy: -21.1672 variance: 48.7875

lowest: -36.698561 most probable(0.103%): -36.698561 best match: -30.092338

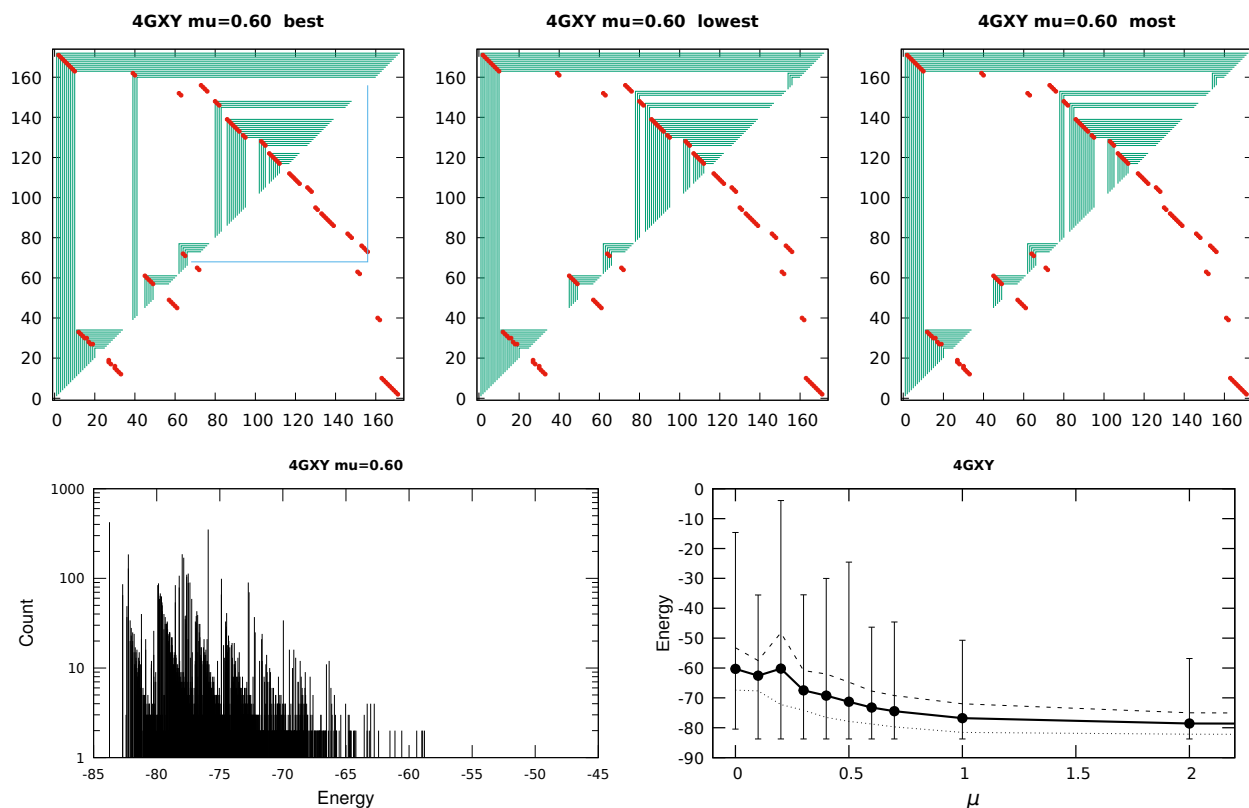


4GXY

GGCGGCAGGU GCUCCCGACC CUGCGGUCGG GAGUAAAAAG GGAAGCCGGU GCAAGUCCGG
CACGGUCCCG CCACUGUGAC GGGGAGUCGC CCCUCGGGAU GUGCCACUGG CCCGAAGGCC
GGGAAGGCGG AGGGGCGGCG AGGAUCCGGA GUCAGGAAAC CUGCCUGCCG UC

mu: 0.6 mean energy: -73.2257 variance: 30.3341

lowest: -83.740922 most probable(1.410%): -83.740922 best match: -76.776740

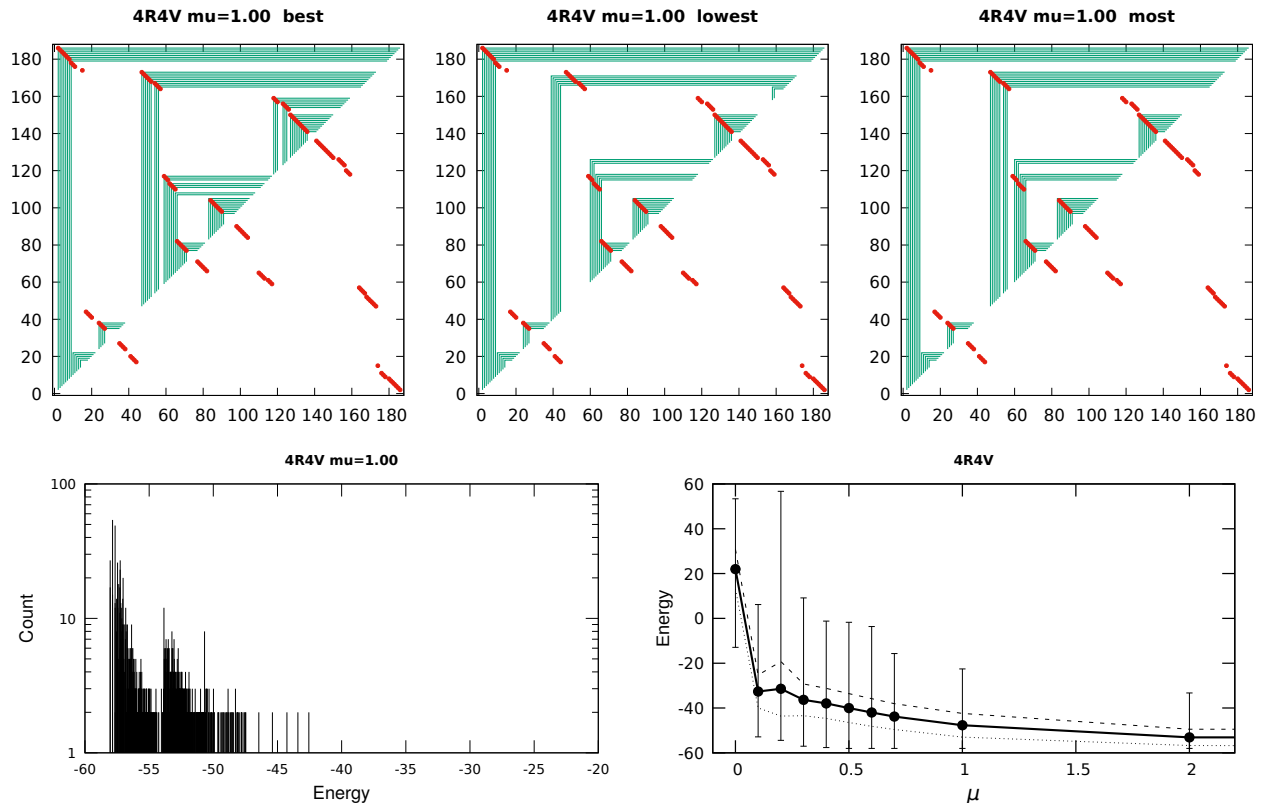


4R4V

GGCGCUGUGU CGCAAUCUGC GAAGGGCGUC GUCGGCCCAA GCGGUAGUAA GCAGGGAACU
 CACCUCCAAU GAAACACAUU GUCGUAGCAG UUGACUACUG UUAUGUGAUU GGUAGAGGCU
 AAGUGACGGU AUUGGCGUAA GCCAAUACCG CAGCACAGCA CAAGCCCGCU UGCGAGAUUA
 CAGCGC

mu: 1 mean energy: -47.6978 variance: 28.0614

lowest: -58.033430 most probable(0.270%): -57.850204 best match: -57.114409

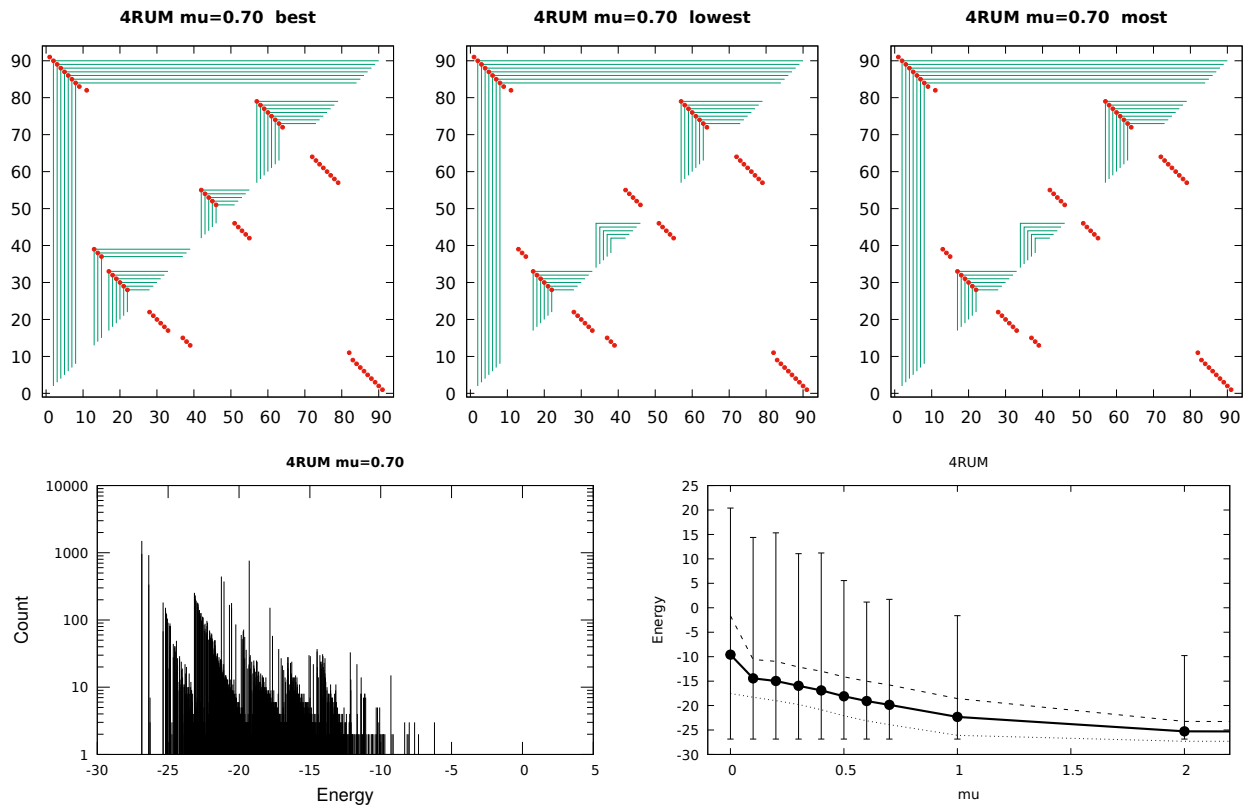


4RUM

XGGAACUGAG CAGGCAAUGA CCAGAGCGGU CAUGCAGCCG GGCUGCGAAA GCGGCAACAG
AUGAUACACG CACAUCUGUG GGACAGUCC CA

mu: 0.7 mean energy: -19.849 variance: 16.4324

lowest: -26.856676 most probable(3.750%): -26.856676 best match: -14.400669



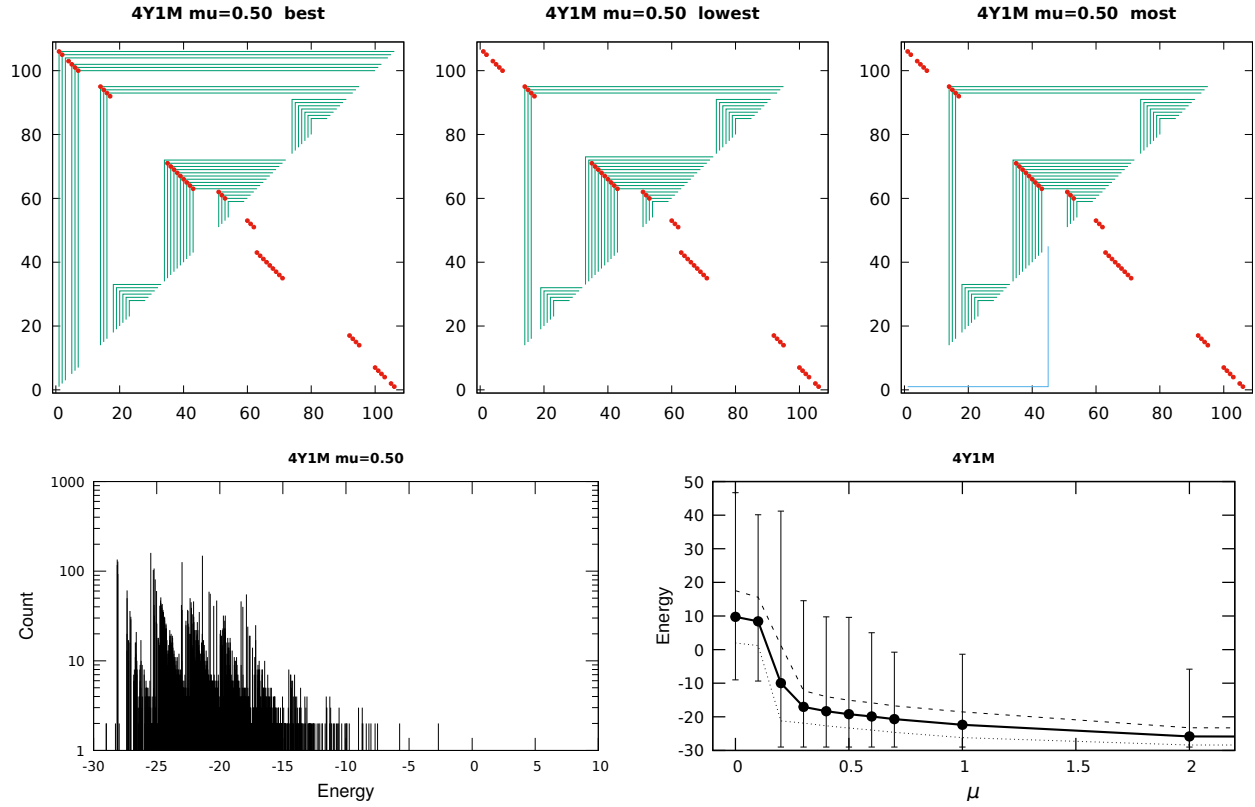
4Y1M

GAUUUGGGGA GUAGCCGAUU UCCGAAAGGA AAUGUACGUG UCAACAUUUU CGUUGAAAAA

CGUGGCACGU ACGGACUGAA GAAAUUCAGU CAGGCGAGAC CAUAUCC

mu: 0.5 mean energy: -19.2023 variance: 17.1072

lowest: -28.998919 most probable(0.400%): -25.470669 best match: -25.094835

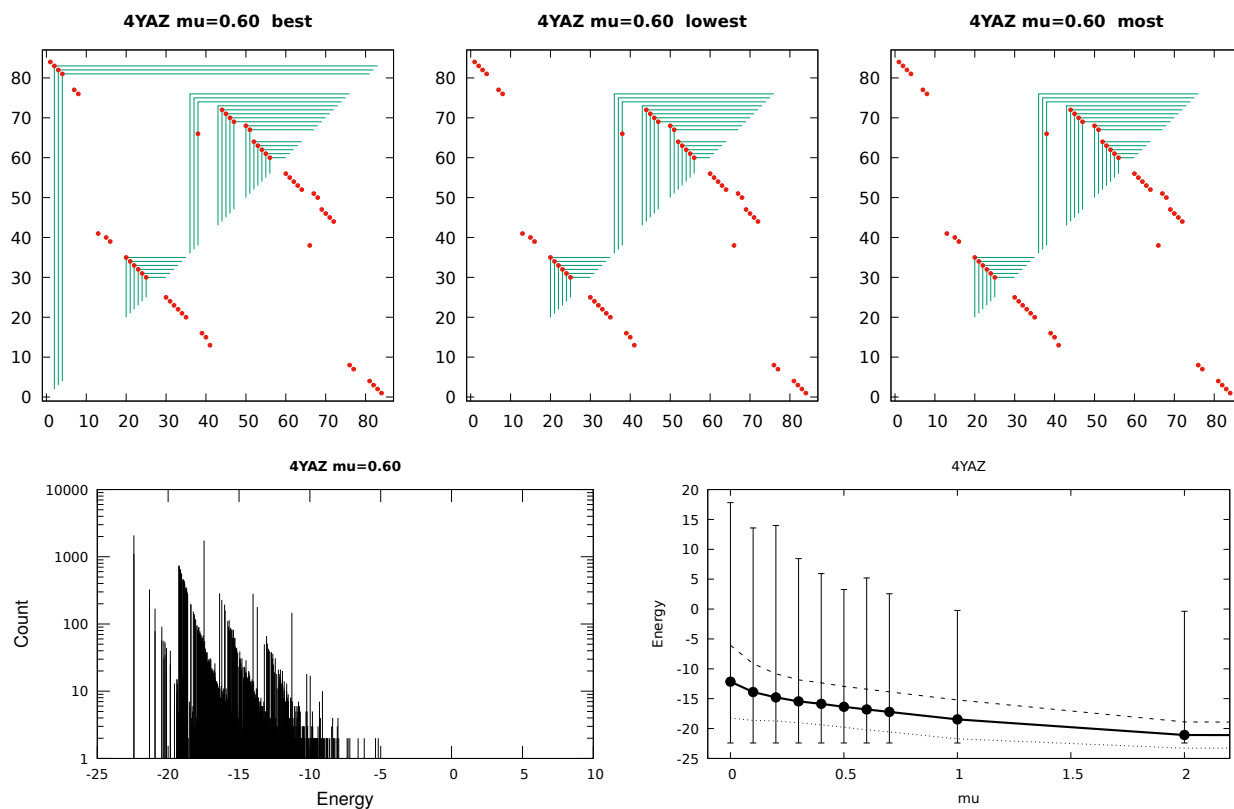


4YAZ

XGUACACGAC AAUACUAAAC CAUCCGCGAG GAUGGGGCGG AAAGCCUAAG GGUCUCCCUG
AGACAGCCGG GCUGCCGAAA UAUCX

mu: 0.6 mean energy: -16.8046 variance: 11.5713

lowest: -22.414085 most probable(5.190%): -22.414085 best match: -18.147841

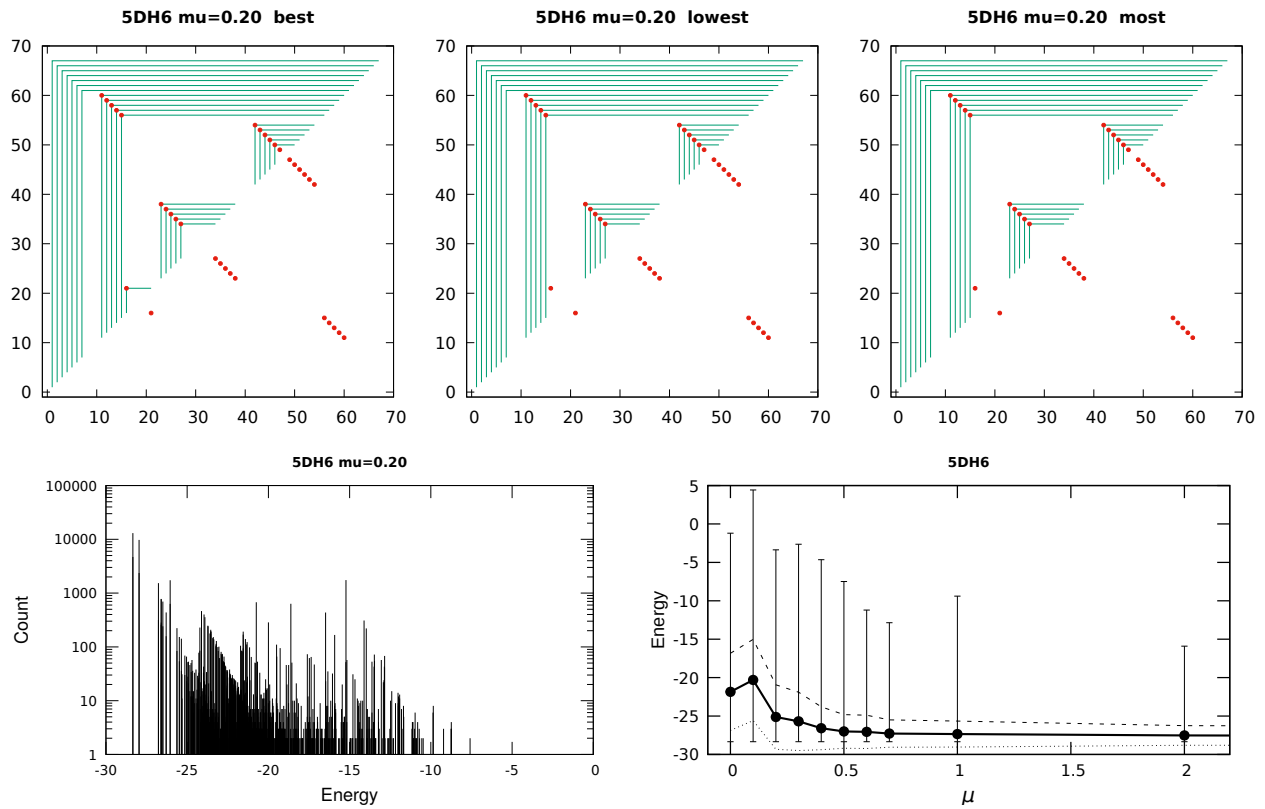


5DH6

GGGUACUUAA GCCCACUGAU GAGUCGCUGG GAUGCGACAA AACGCCCAGG GCGUCUGGGC
AGUACCCA

mu: 0.2 mean energy: -25.1268 variance: 17.6048

lowest: -28.340502 most probable(21.760%): -28.340502 best match: -15.489549

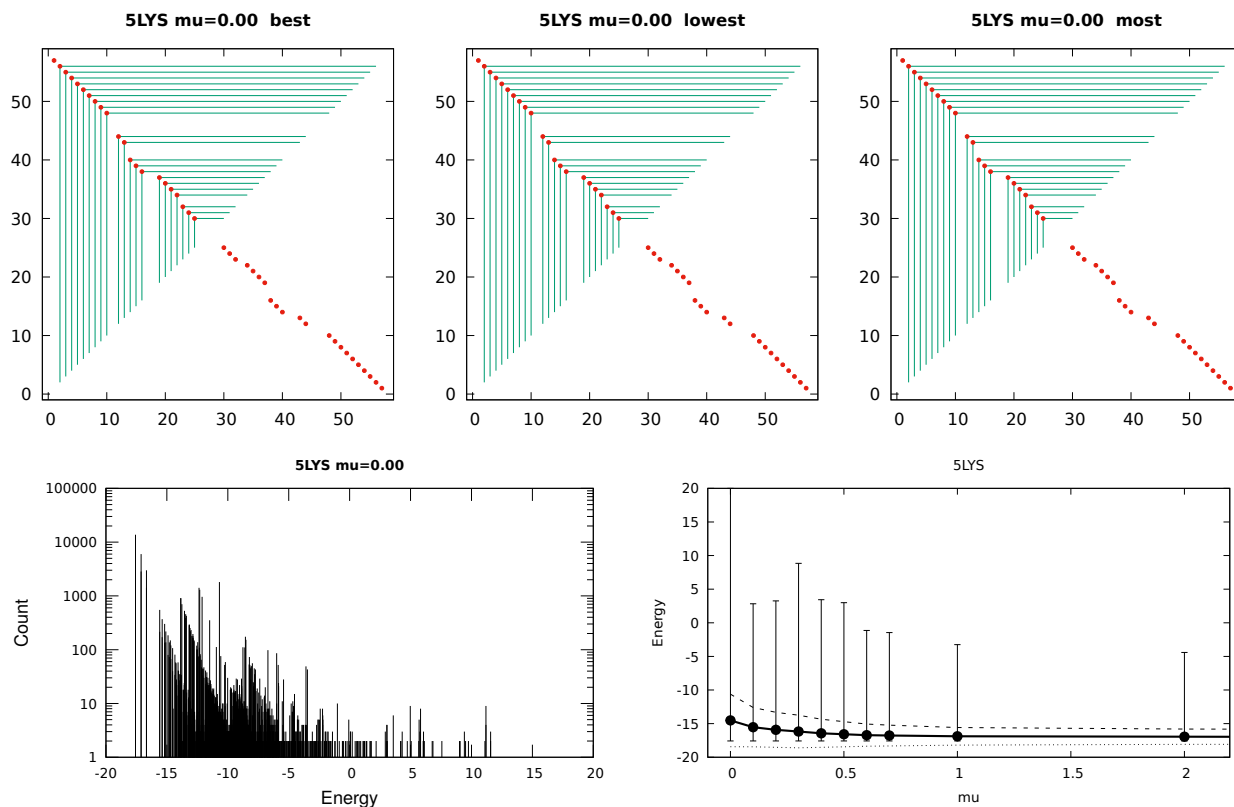


5LYS

GGGAUCUGUC ACCCCAUUGA UGCCCUCGG GCUGAUCUGG CUGGCUAGGC GGGUCCX

mu: 0 mean energy: -14.5216 variance: 15.3159

lowest: -17.575333 most probable(22.852%): -17.575333 best match: -17.575333

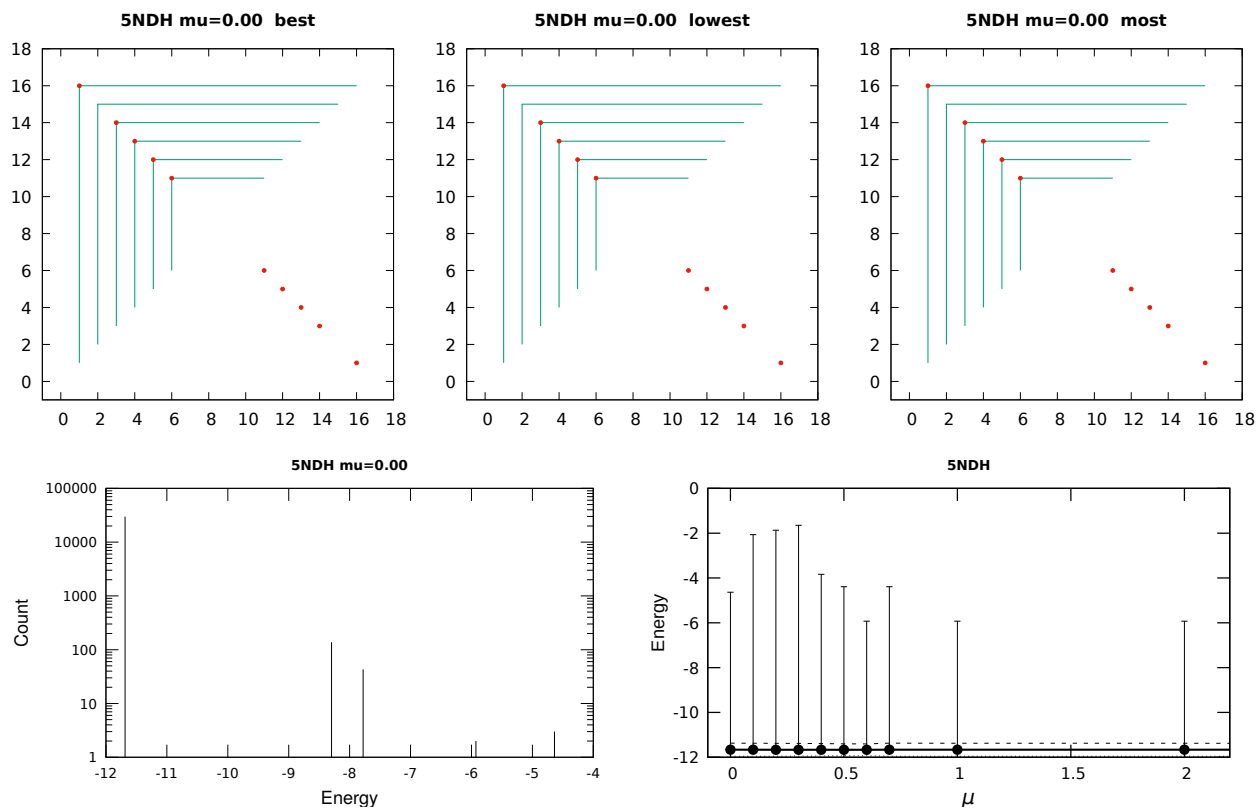


5NDH

GCGGGGACGA CCCCCG

mu: 0 mean energy: -11.6637 variance: 0.0847309

lowest: -11.686501 most probable(99.373%): -11.686501 best match: -11.686501

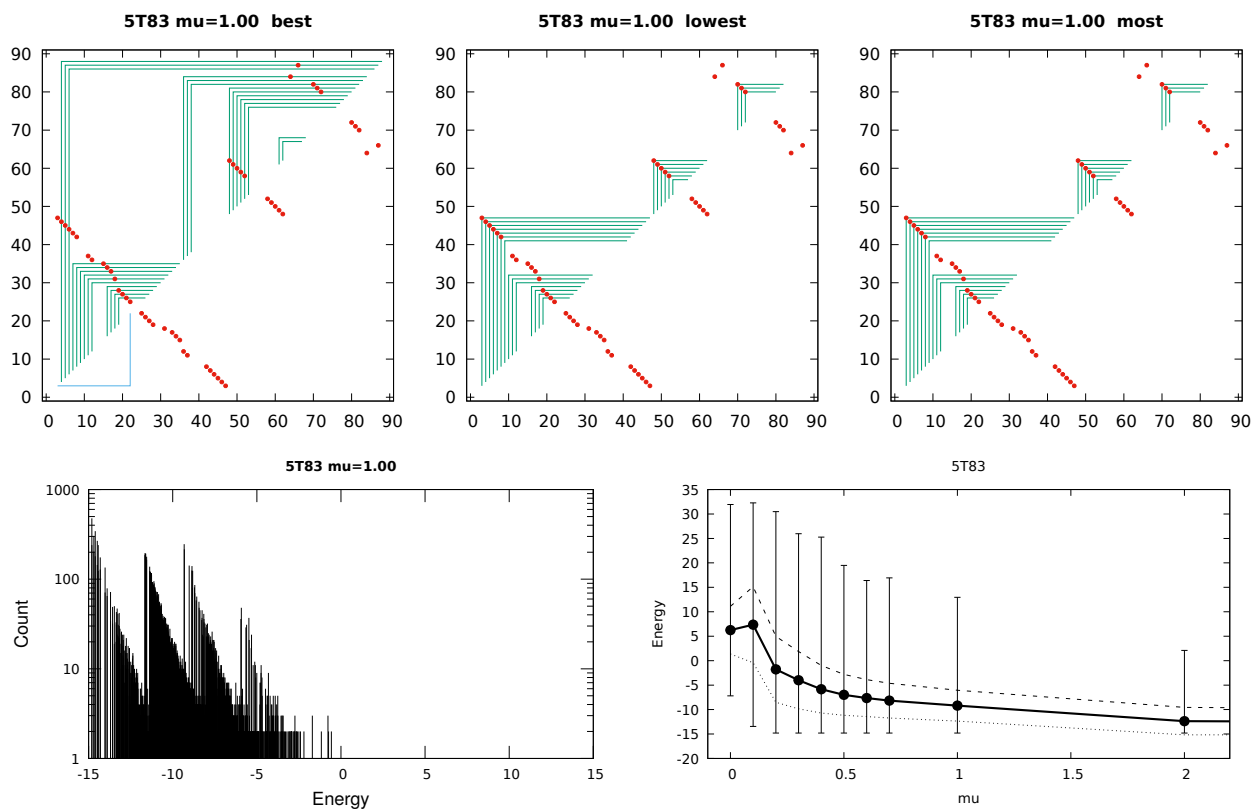


5T83

AAGUUUGCUA GGGUCCGCG UCAAGGUGGU CUGGUCCAAG AGCAAACGGC UUUCACAAAAG
CCACACGGAA GGAUAAAAGC CUGGGAGAU

mu: 1 mean energy: -9.19915 variance: 9.93784

lowest: -14.805921 most probable(1.192%): -14.805921 best match: -3.208489

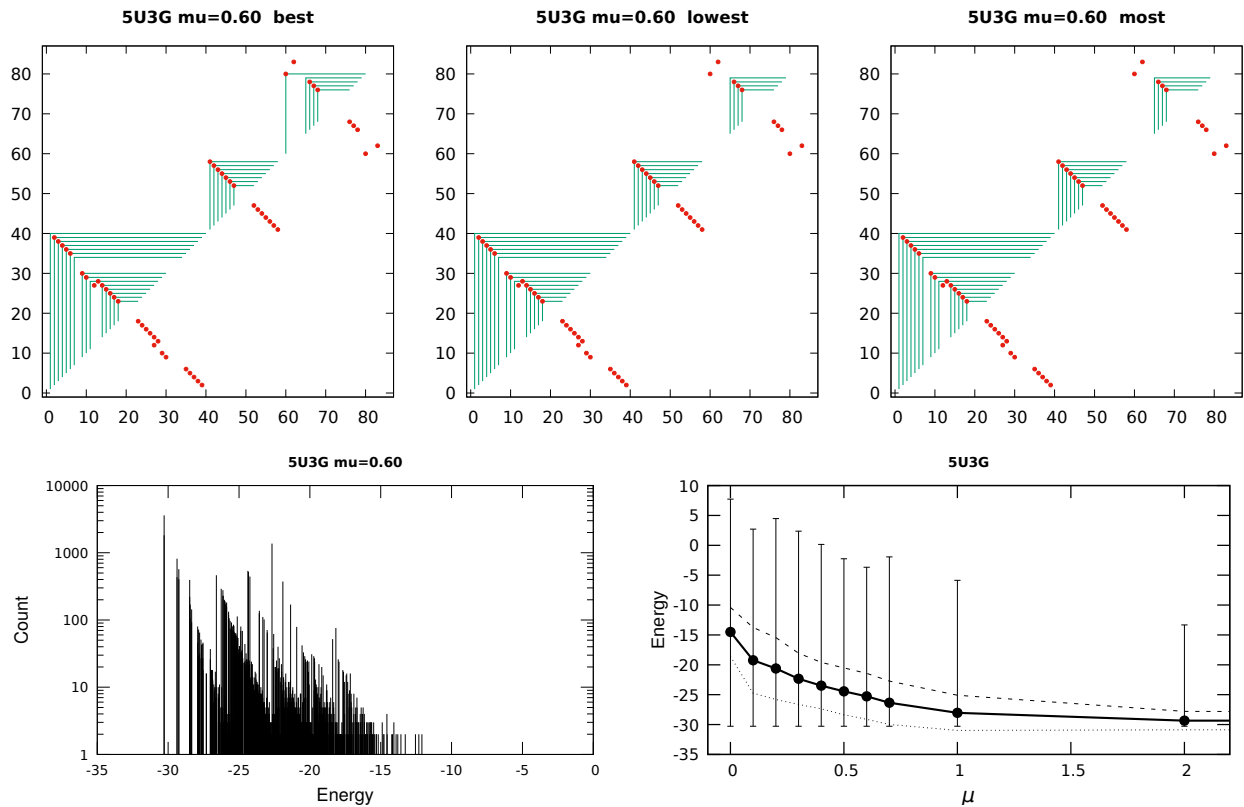


5U3G

GGUGACUAGG GUUCCGGCGA AAGCCGGUCC GAGAGUUACC GACCGCCGAA AGGCGGUUAC
ACGGCGGGAA AAAAGCCCGG GAGGA

mu: 0.6 mean energy: -25.2729 variance: 14.7465

lowest: -30.283836 most probable(11.993%): -30.283836 best match: -22.394836

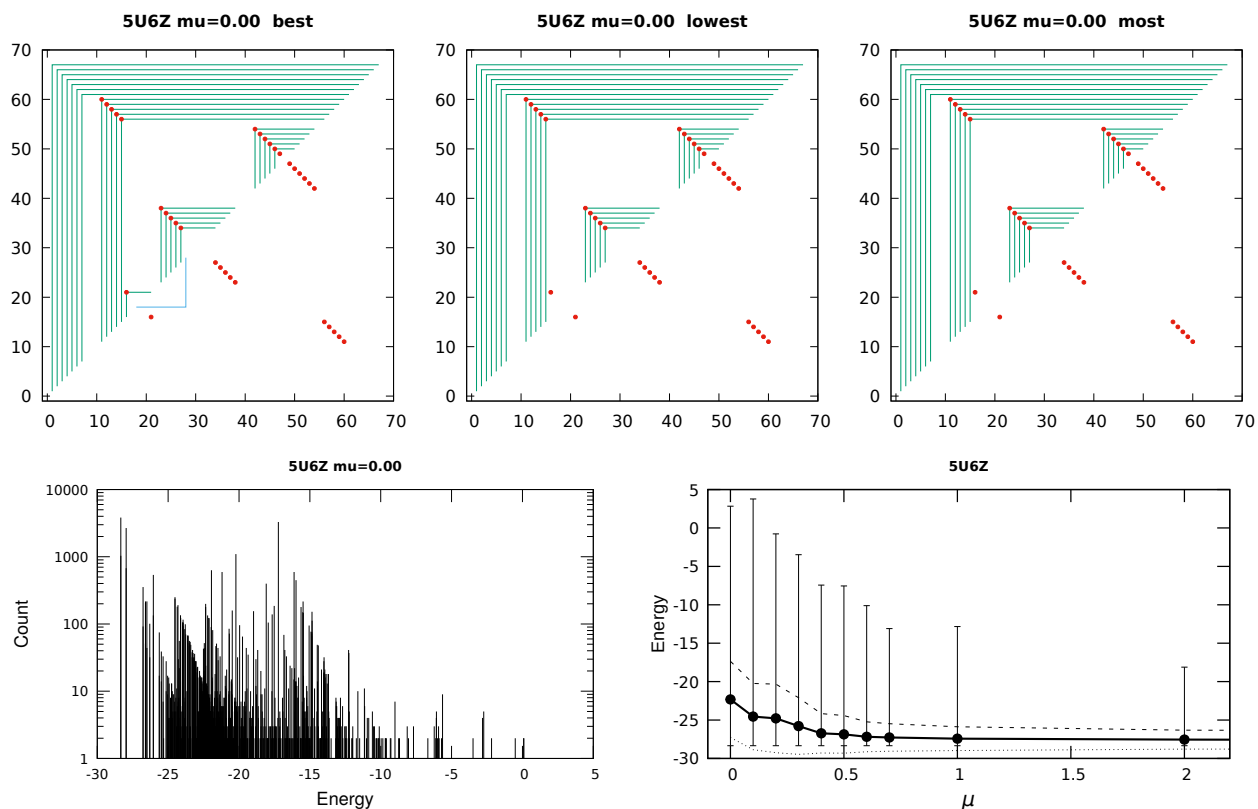


5U6Z

GGGUACUUAA GCCCACUGAU GAGUCGCUGG GAUGCGACAA AACGCCCAGG GCGUCUGGGC
AGUACCCA

mu: 0 mean energy: -22.3125 variance: 24.5984

lowest: -28.340502 most probable(12.750%): -28.340502 best match: -7.970191

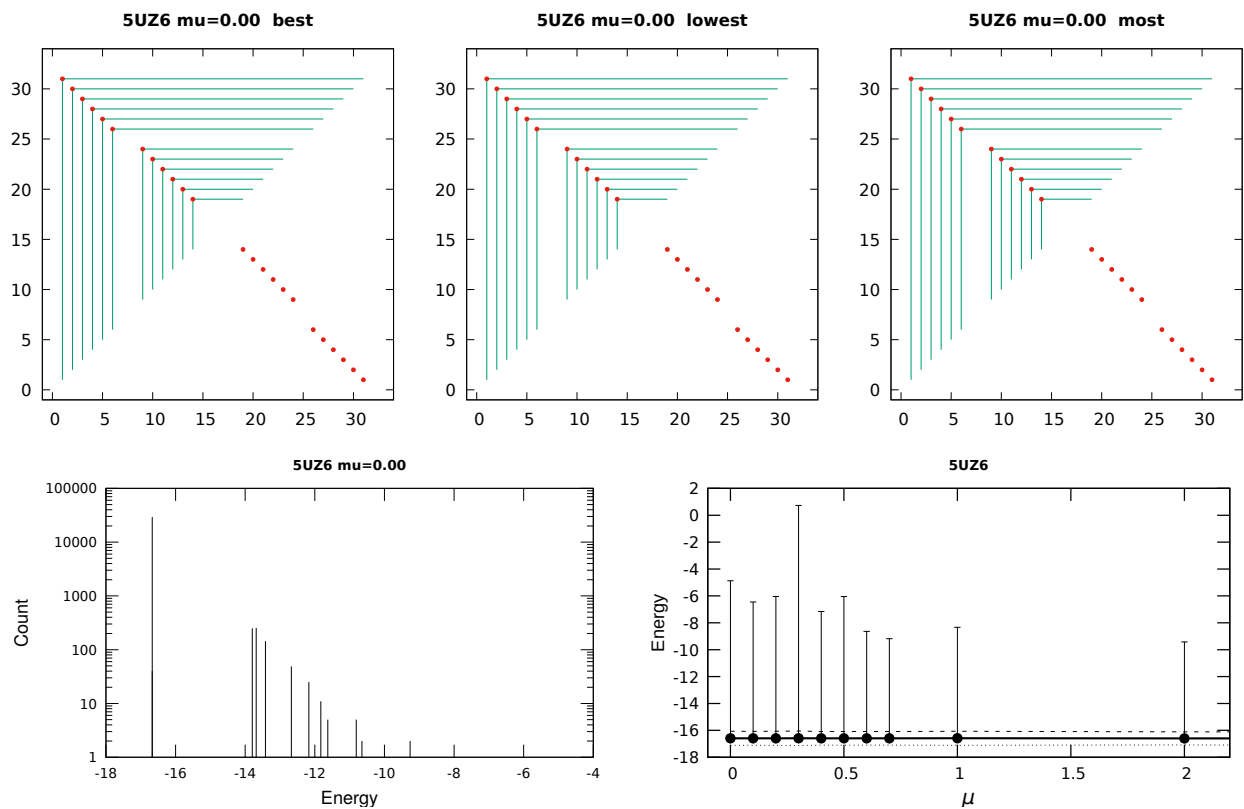


5UZ6

GAGGUGNNGA GCGCGAAAGC GCUCGCACCU CA

mu: 0 mean energy: -16.5892 variance: 0.275466

lowest: -16.671002 most probable(97.350%): -16.671002 best match: -16.671002

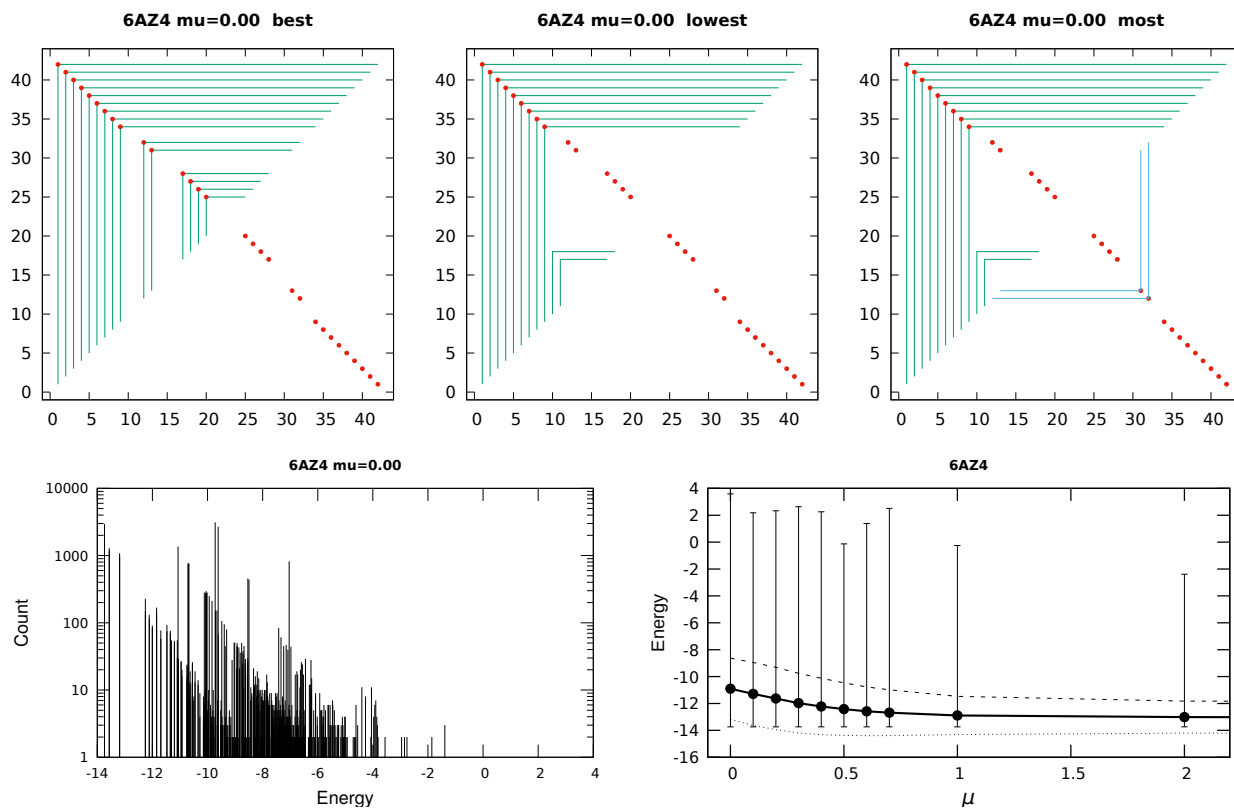


6AZ4

CUGCUGCUGC CGCUAAGGAU GAAAGUCUAU GCXCAGCAGC AG

mu: 0 mean energy: -10.9028 variance: 5.18715

lowest: -13.738309 most probable(10.410%): -9.723309 best match: -12.256337

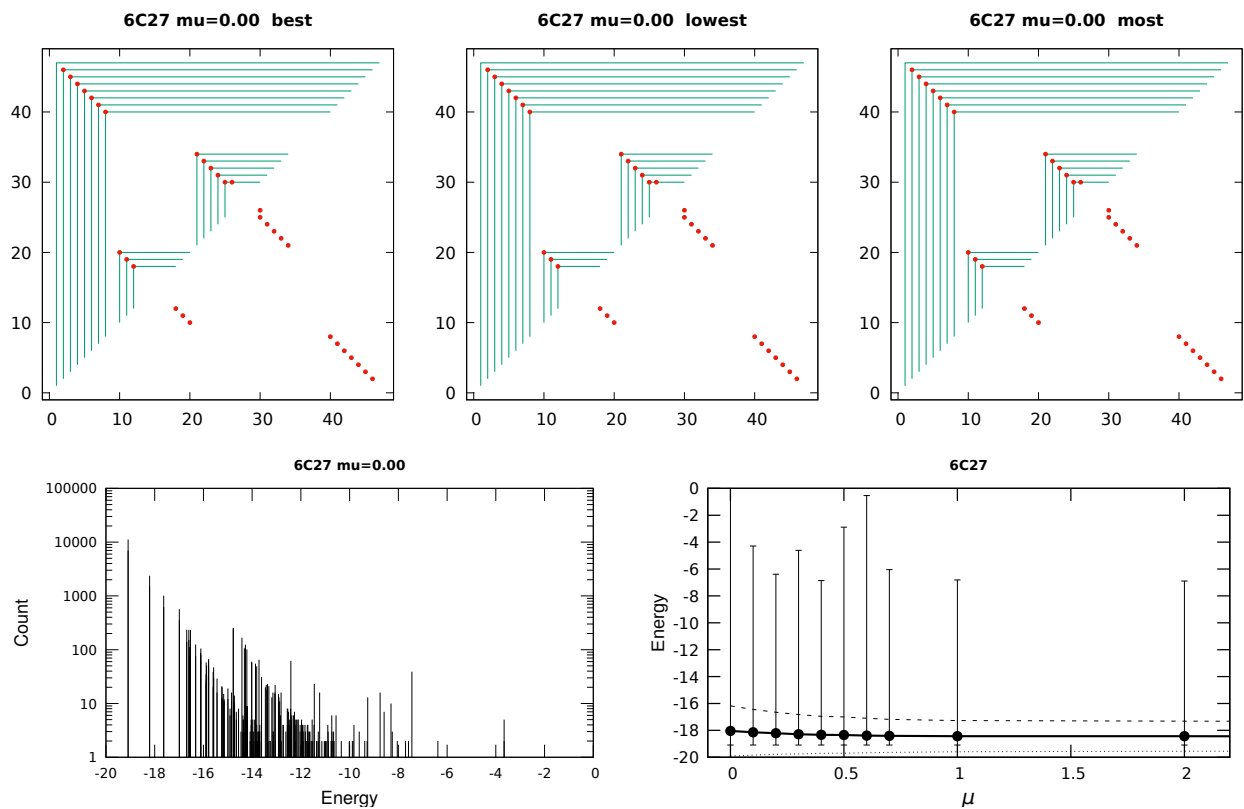


6C27

GGGACAAGUU CCCGAAAGGA UGGCGGAAAC GCCAGAUGCC UUGUCCC

mu: 0 mean energy: -18.0435 variance: 3.46855

lowest: -19.091168 most probable(37.303%): -19.091168 best match: -19.091168

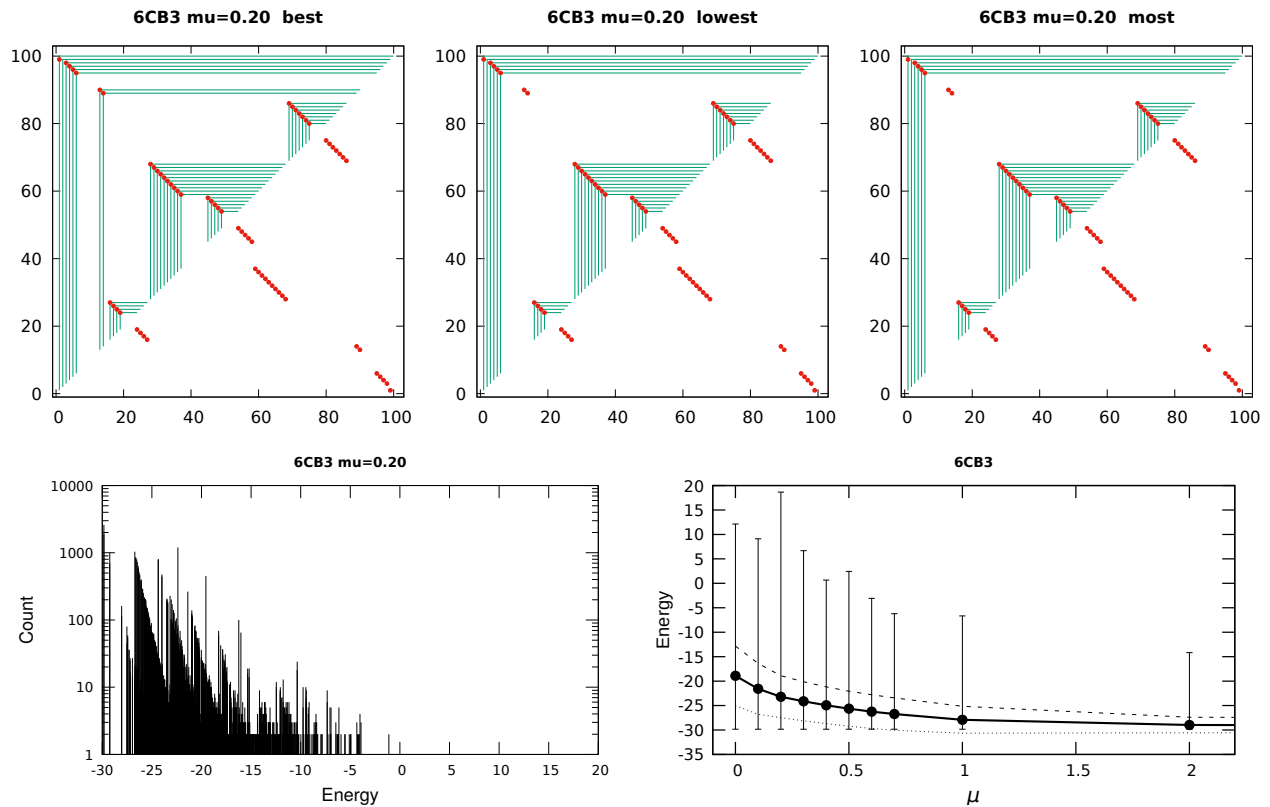


6CB3

GAAAGGGGAG UAGCGUCGGG AAACCGAAAC AAAGUCGUCA AUUCGUGAGG AAACUCACCG
GCUUUGUUGA CAUACGAAAG UAUGUUUAGC AAGACCUUUC C

mu: 0.2 mean energy: -23.2019 variance: 18.5001

lowest: -29.834049 most probable(4.338%): -29.834049 best match: -28.044420

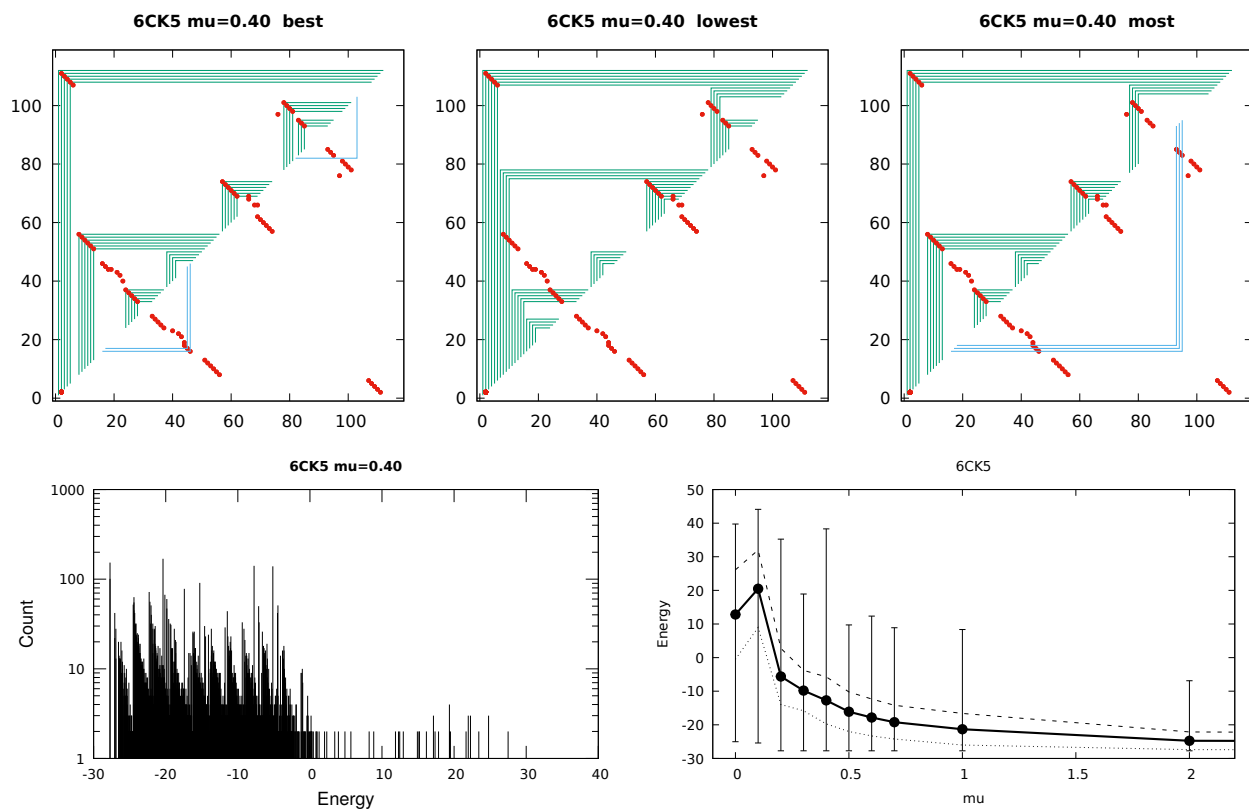


6CK5

GUGAAAGUGU ACCUAGGGUU CCAGCCUAUU UGUAGGUGUU CGGACCGAGC GGUACAGGUA
 UAUUUUUUAUA UACCACACCU UAGGGACAAA AGCCCGGGAG GAUAGGUUUC ACUCGUA

mu: 0.4 mean energy: -12.7208 variance: 49.0397

lowest: -27.721838 most probable(0.282%): -20.374132 best match: 32.363217

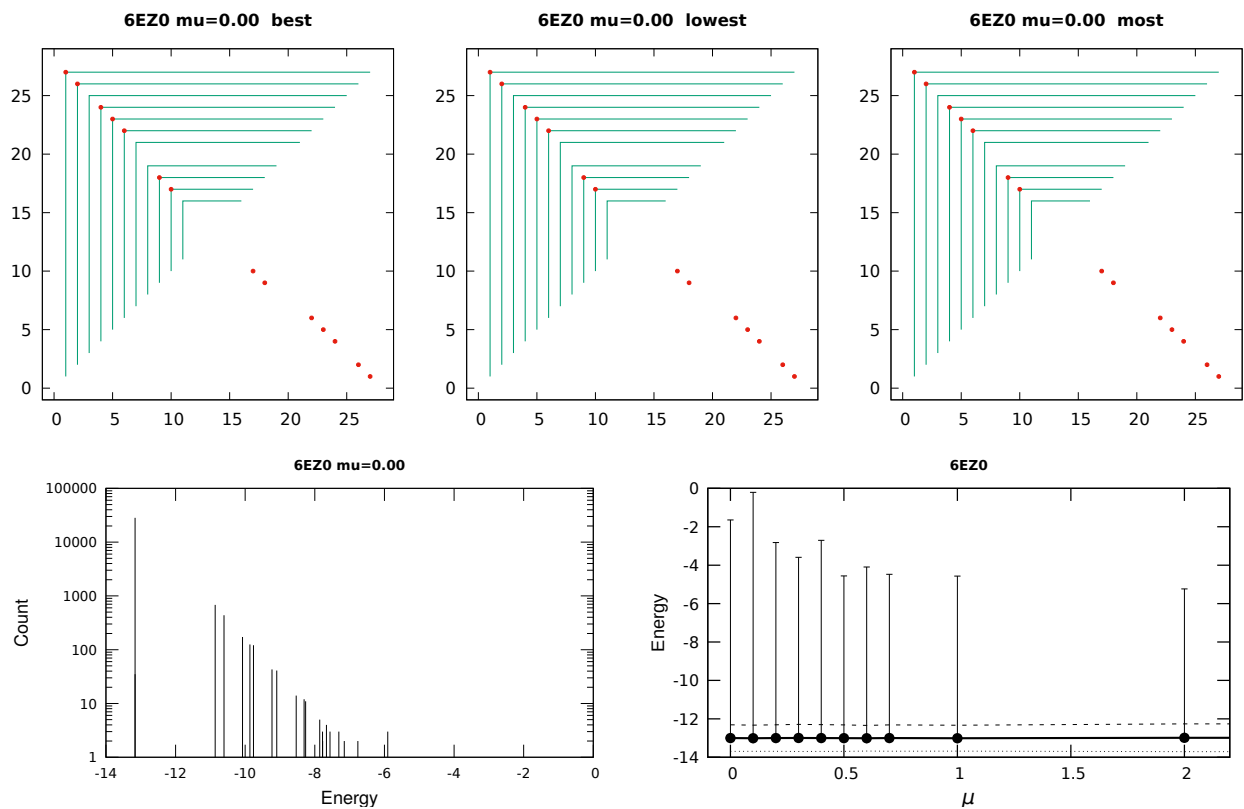


6EZ0

GGAGCGGGGG UGUAACCUA UCGCUCC

mu: 0 mean energy: -13.0023 variance: 0.478232

lowest: -13.164001 most probable(94.210%): -13.164001 best match: -3.888215

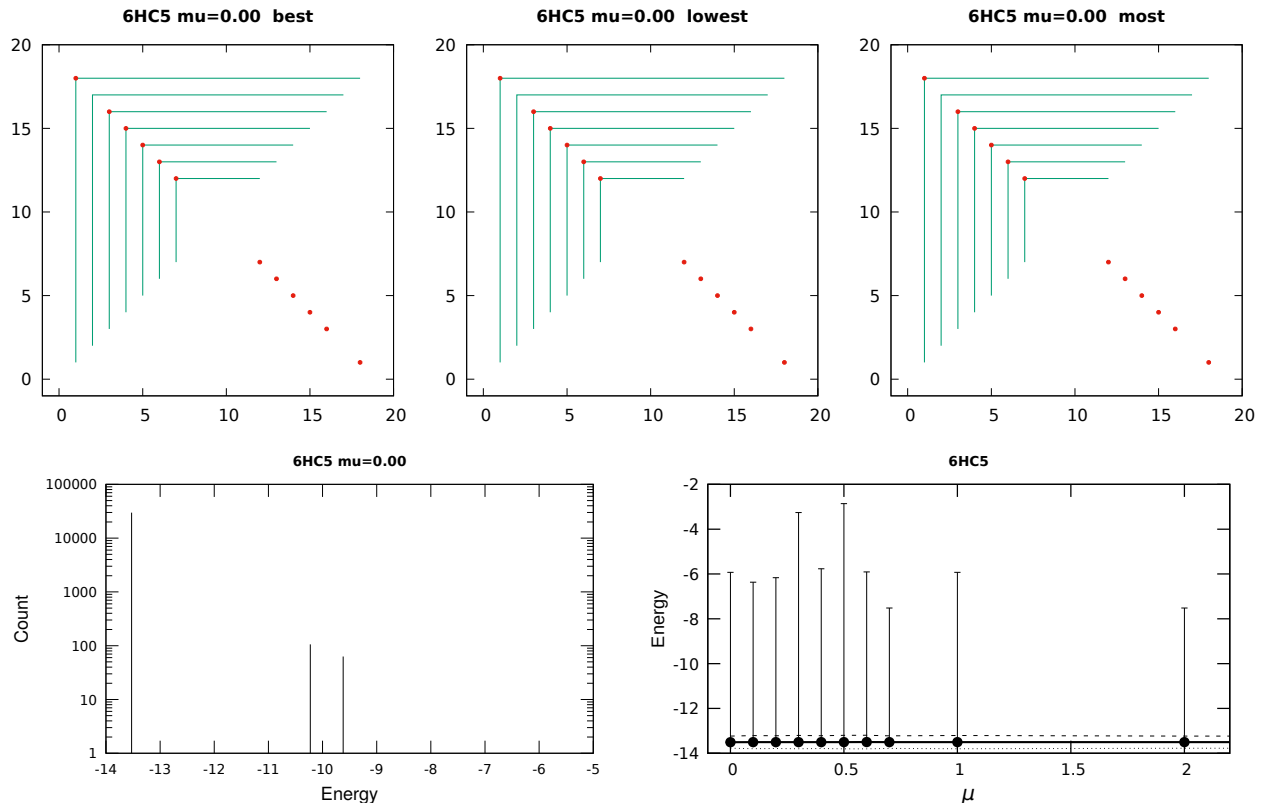


6HC5

GGUGGGGACG ACCCCACC

mu: 0 mean energy: -13.5061 variance: 0.0736758

lowest: -13.526501 most probable(99.427%): -13.526501 best match: -13.526501

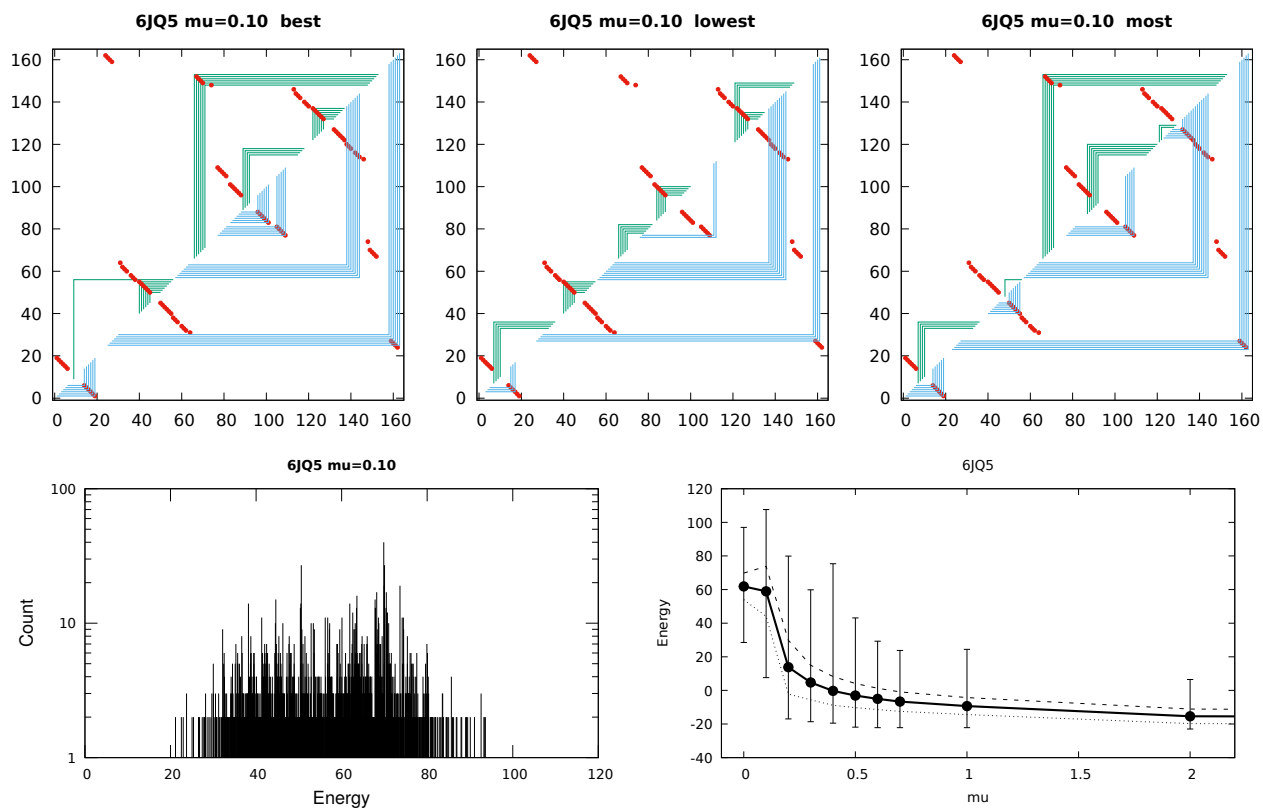


6JQ5

UUACUGUGAG AAUCAGUAAC AAACAUGUGG GGCUUAUAUC UAAUCGAAAG AUUAGUAUUA
 GUGCAGACGU UAAAACCAUG UCUUACUGUG AGAAUCAGUA ACAAACAUGU GGGGCUUAUA
 UCUAAUCGAA AGAUUAGUAU UAGUGCAGAC GUUAAAACCA UGU

mu: 0.1 mean energy: 58.9288 variance: 221.024

lowest: 7.606432 most probable(0.067%): 69.841713 best match: 48.208836

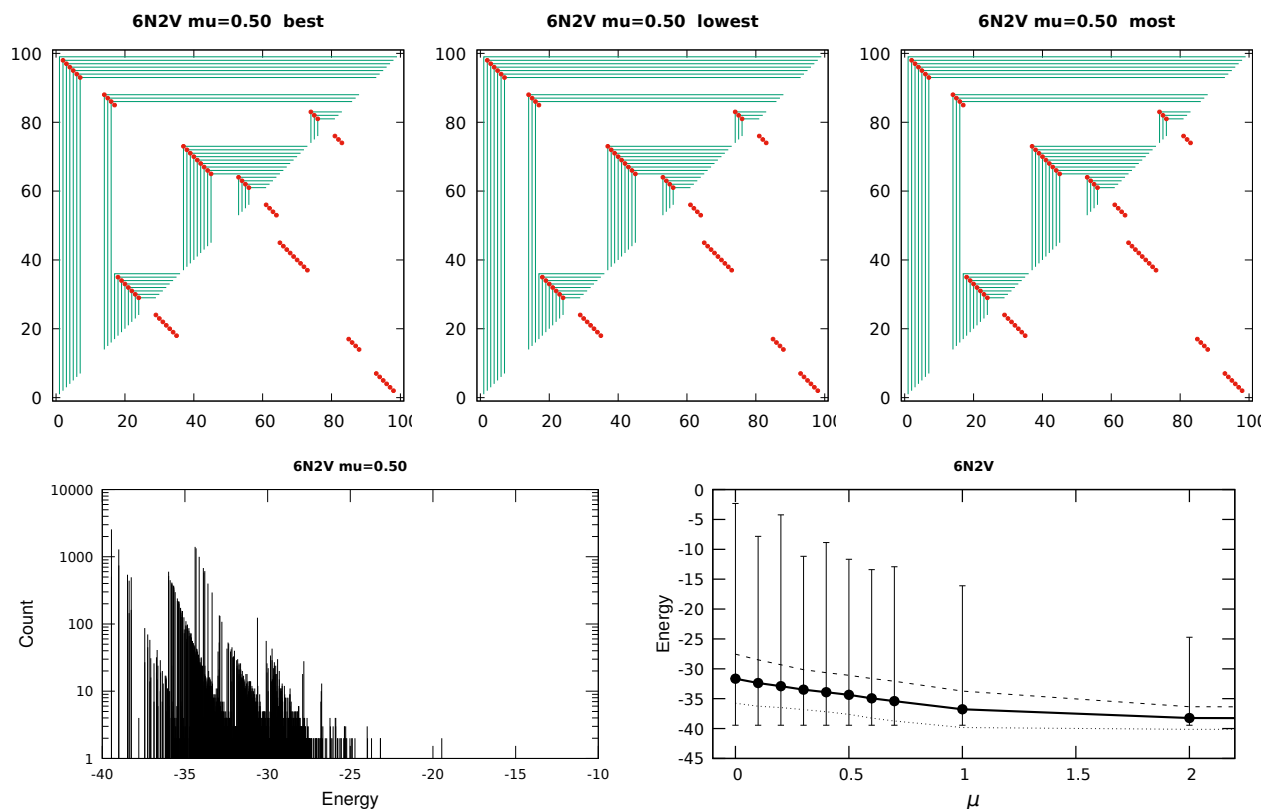


6N2V

GGCUUGGGGA GUAGCCUGCU UUCGGAAACG AAAGCGCCUG UAUCAACAU CUCGGCGAAA
 GCCGUGGUGC AGGACCGAAA GGUCUGGCGA GACCAGGCC

mu: 0.5 mean energy: -34.3581 variance: 10.6921

lowest: -39.447755 most probable(6.390%): -39.447755 best match: -39.447755

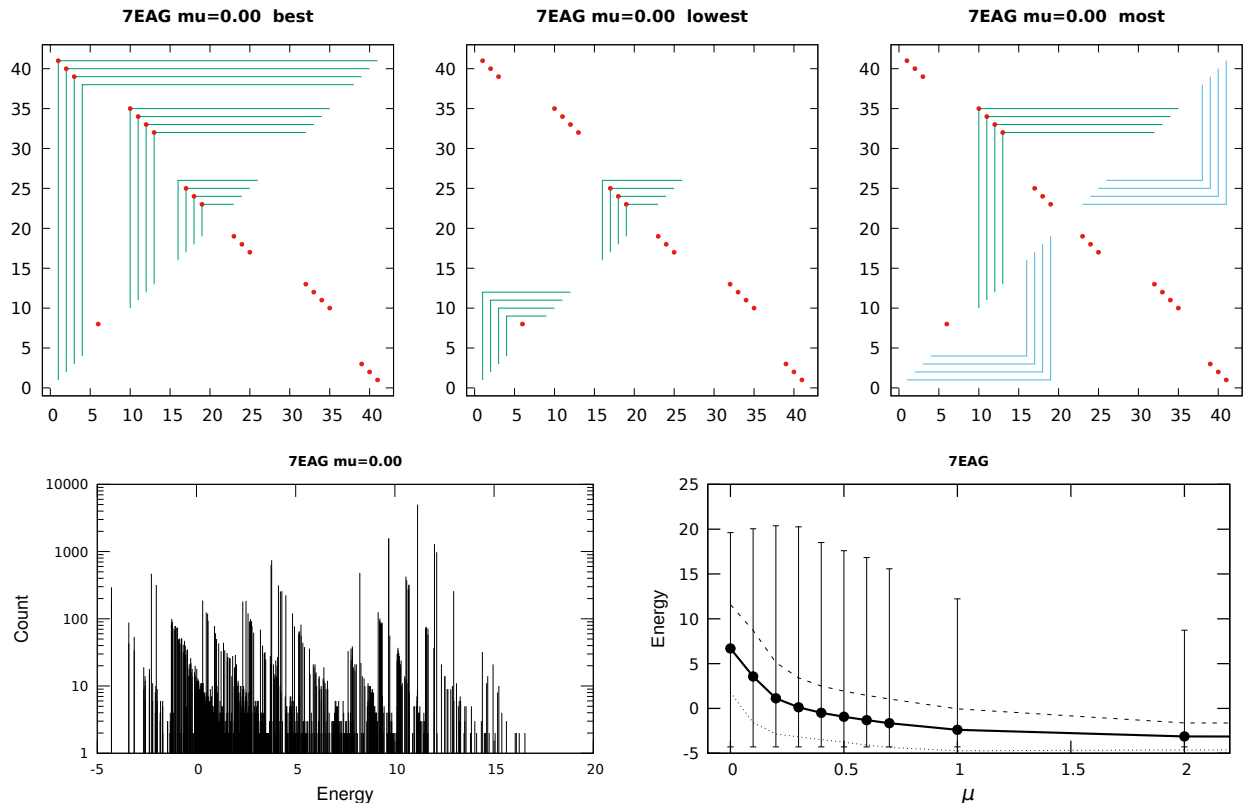


7EAG

GUCUAUGAAG GCUGGAGACX XXGUCUAUGA AGGCUGGAGA C

mu: 0 mean energy: 6.6929 variance: 23.9203

lowest: -4.285668 most probable(16.620%): 11.142267 best match: 7.025000

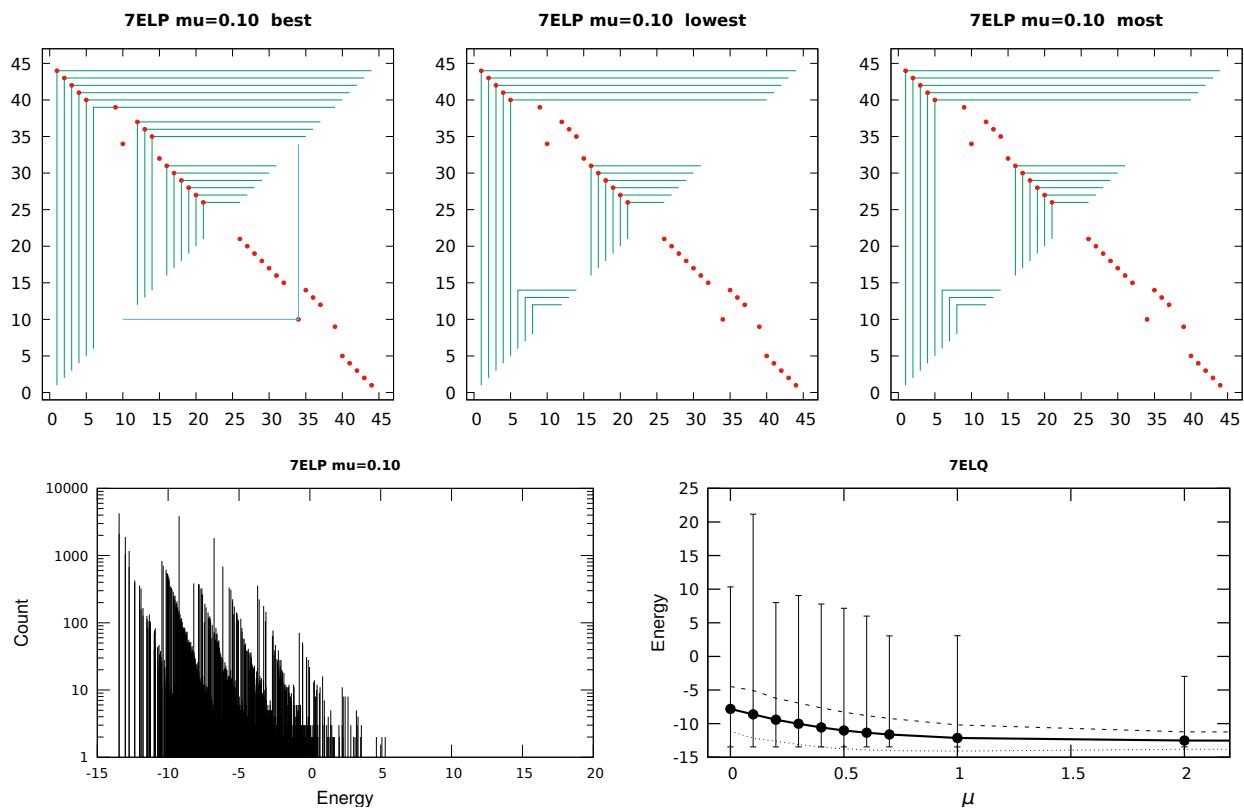


7ELQ

GAGUAGAAGC GUUCAGCGGC CGAAAGGCCG CCCGAAAUU GCUCC

mu: 0.1 mean energy: -8.68329 variance: 11.0589

lowest: -13.458167 most probable(7.088%): -13.458167 best match: -6.406584

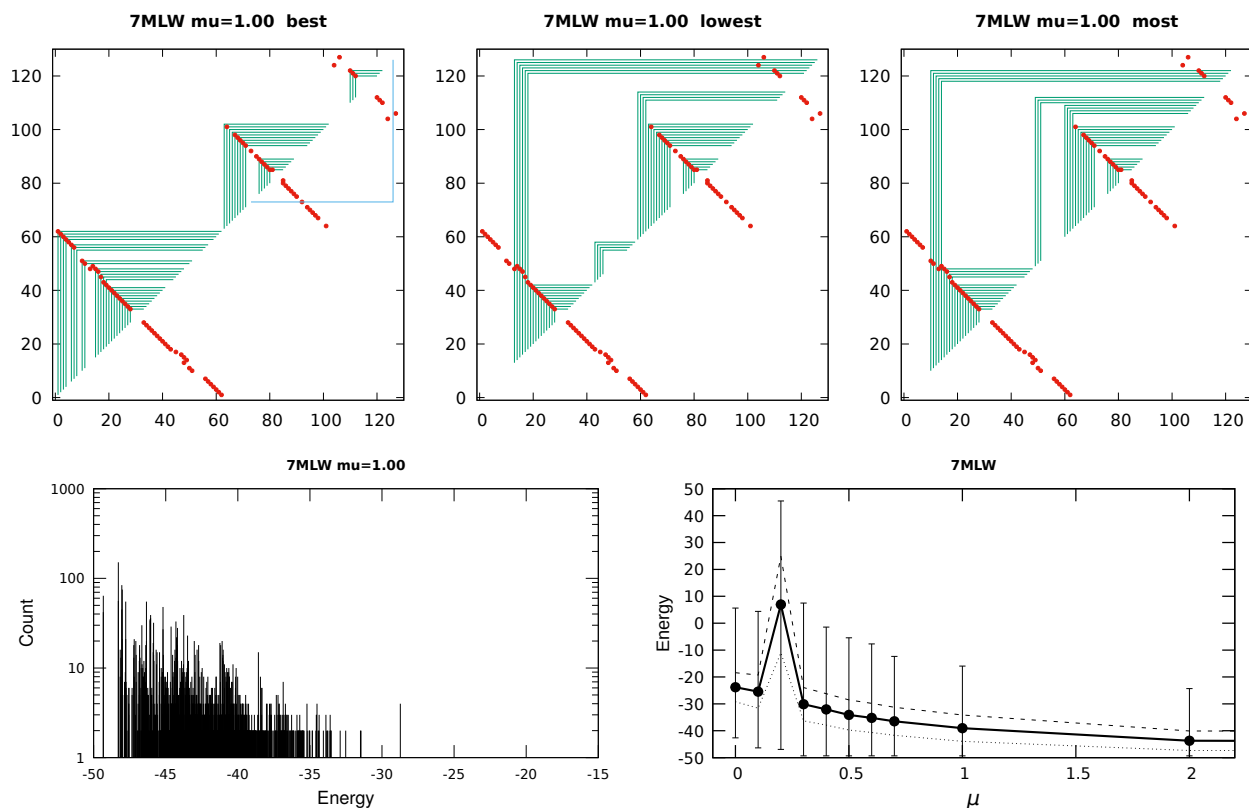


7MLW

GGAUCGCUAG GGUUCCGGUC GUGCGGCGUU CGCGCCGCAC GAUGCUGGUC CGAGAGCAAU
 CCGGUCUUGC CUUCGCCUCG UUCGCGAGGA AACGGCGAGG CUCCACGGAG GGAUAAAAGC
 CCGGGAGG

μ : 1 mean energy: -39.0361 variance: 23.8925

lowest: -49.326253 most probable(0.755%): -48.285753 best match: -43.319338

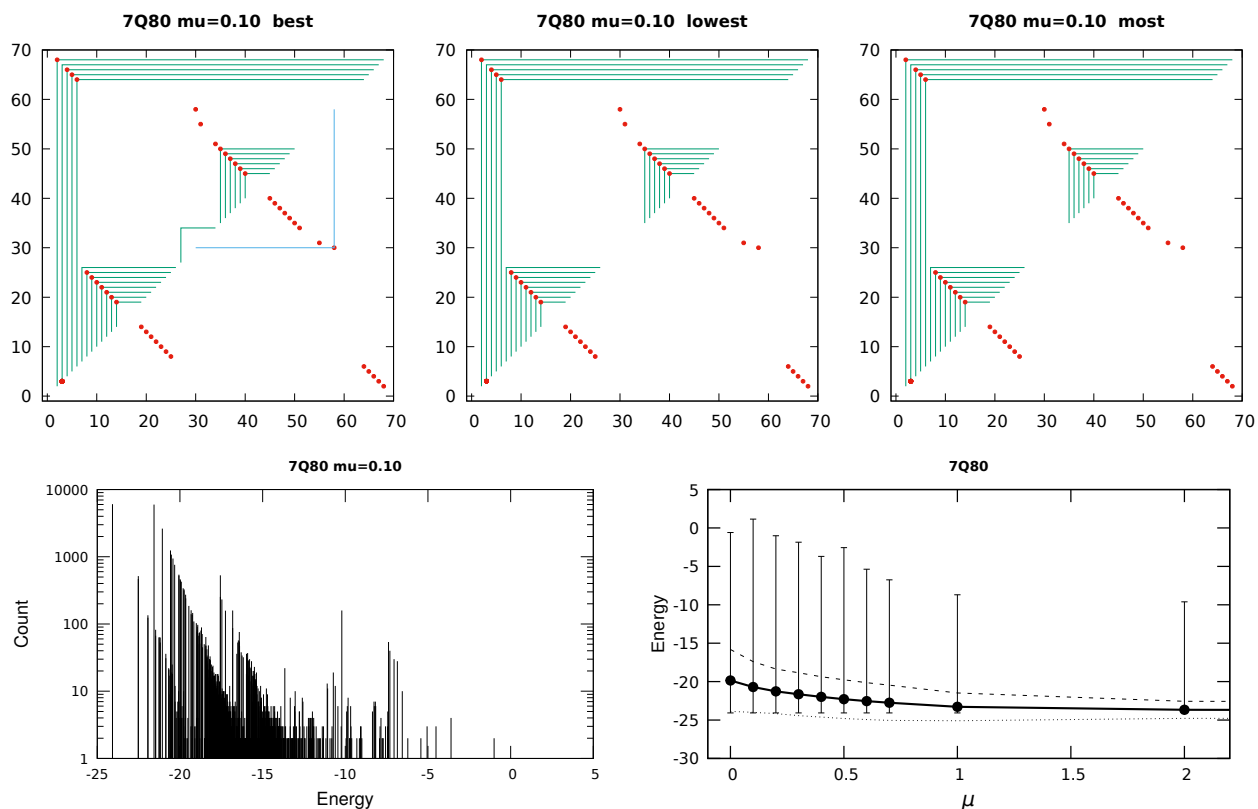


7Q80

CCACUGAGAG CUUCXXXGGA AGCUCUGACC GACCCCCAGC CXXXGCUGGG ACAACUAGAC
AUACAGUG

mu: 0.1 mean energy: -20.6978 variance: 10.9104

lowest: -24.079920 most probable(15.143%): -24.079920 best match: -19.808859



7TZS

GGACUCGGGG UGCCCUCUG CGUGAAGGCU GAGAAUACC CGUAUCACCU GAUCUGGAUA
AUGCCAGCGU AGGGAAGUUC

mu: 0.1 mean energy: 1.65853 variance: 28.7366

lowest: -13.142335 most probable(0.748%): -1.877964 best match: 10.579442

