```
Shutting down thread pool...
Starting thread pool with 1 slots...


weka.classifiers.meta.MultiSearch
=================================
Options: -E ACC -search "weka.core.setupgenerator.MathParameter -property classifier.ridge
-min -12.0 -max -2.0 -step 1.0 -base 10.0 -expression pow(BASE,I)" -search
"weka.core.setupgenerator.MathParameter -property classifier.maxIts -min 1.0 -max 15.0 -step
1.0 -base 10.0 -expression I" -sample-size 100.0 -log-file C:\Users\Su\Desktop\log.txt
-initial-folds 10 -subsequent-folds 10 -num-slots 1 -S 1 -W
weka.classifiers.functions.Logistic -- -R 1.0E-8 -M -1


Step 1:


=== Initial space - Start ===
Determining best values with 10-fold CV in space:
2-dimensional space:
 - 1. dimension: classifier.ridge, min: -12.0, max: -2.0, step: 1.0
 - 2. dimension: classifier.maxIts, min: 1.0, max: 15.0, step: 1.0


Performance (-12, 1): 83.98501230539502 (ACC): cached=false
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Performance (-4, 8): 87.58122943339878 (ACC): cached=false
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Performance (-5, 9): 87.59090783397396 (ACC): cached=false
Performance (-4, 9): 87.59090783397396 (ACC): cached=false
Performance (-3, 9): 87.58952520532036 (ACC): cached=false
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Performance (-2, 12): 87.58122943339878 (ACC): cached=false
Performance (-12, 13): 87.62132566435307 (ACC): cached=false
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Performance (-10, 13): 87.62132566435307 (ACC): cached=false
Performance (-9, 13): 87.62132566435307 (ACC): cached=false
Performance (-8, 13): 87.62132566435307 (ACC): cached=false
Performance (-7, 13): 87.62132566435307 (ACC): cached=false
Performance (-6, 13): 87.62132566435307 (ACC): cached=false
Performance (-5, 13): 87.62132566435307 (ACC): cached=false
Performance (-4, 13): 87.62132566435307 (ACC): cached=false
Performance (-3, 13): 87.62132566435307 (ACC): cached=false
Performance (-2, 13): 87.62132566435307 (ACC): cached=false
Performance (-12, 14): 87.61441252108509 (ACC): cached=false
Performance (-11, 14): 87.61441252108509 (ACC): cached=false
Performance (-10, 14): 87.61441252108509 (ACC): cached=false
Performance (-9, 14): 87.61441252108509 (ACC): cached=false
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Performance (-8, 14): 87.61441252108509 (ACC): cached=false
Performance (-7, 14): 87.61441252108509 (ACC): cached=false
Performance (-6, 14): 87.61441252108509 (ACC): cached=false
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Performance (-3, 14): 87.61441252108509 (ACC): cached=false
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Performance (-12, 15): 87.60058623454913 (ACC): cached=false
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Performance (-2, 15): 87.59920360589553 (ACC): cached=false


Correlation coefficient:
2-dimensional space:
 - 1. dimension: classifier.ridge, min: -12.0, max: -2.0, step: 1.0
 - 2. dimension: classifier.maxIts, min: 1.0, max: 15.0, step: 1.0
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Root mean squared error:
2-dimensional space:
 - 1. dimension: classifier.ridge, min: -12.0, max: -2.0, step: 1.0
 - 2. dimension: classifier.maxIts, min: 1.0, max: 15.0, step: 1.0
0.3165554636281258
0.3165554636281251
0.3165554636281205
0.3165554636280883
0.3165554636277467
0.3165554636243505
0.31655546359035464
0.31655546325042383
0.3165554598511245
0.3165554258598107
0.31655508611730654
0.3169567740246885
0.3169567740246882
0.31695677402468303
0.3169567740246392
0.3169567740241818
0.3169567740196161
0.31695677397396493
0.3169567735174528
0.3169567689523288
0.31695672330277674
0.3169562669743086
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0.31695054822037055
0.31695054822032115
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0.31695054821490143
0.31695054816562734

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0.31664309164598176
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0.3166106918980363
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0.3166106914245837
0.316610687163477
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0.3165451118480732
0.316545111848041
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0.3165451118109054
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0.31657438976445035
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0.31740415115076653
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0.3188477875630989
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0.31884778756269566
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0.3188477835258075
0.3188477471902658
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0.3217684362773995
0.3217684362773953
0.3217684362773553
0.32176843627694834
0.3217684362728824
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0.32176843582593173
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0.32176839113082295
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0.31986068432592407
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0.3198606798491232

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0.35149911458615474
0.35149910848525473
0.35149904747631194
0.3514984373946086

Root relative squared error:
2-dimensional space:
 - 1. dimension: classifier.ridge, min: -12.0, max: -2.0, step: 1.0
 - 2. dimension: classifier.maxIts, min: 1.0, max: 15.0, step: 1.0
78.12120258433806
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78.12120258424451
78.12120258340637
78.1212025750167
78.12120249112681
78.12120165223006
78.12119326367697
78.121109420256
78.22024004977858
78.2202400497785
78.22024004977722
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78.22024004965353
78.22024004852678
78.22024003726075
78.2202399246003
78.2202387979953
78.22022753236156
78.22011491725047
78.2187036134323
78.21870361343223
78.2187036134309

78.21870361341871
78.21870361329744
78.2187036120812
78.21870359992108
78.21870347832649
78.21870226238217
78.21869010336918
78.21856855656476
78.23983813151152
78.23983813151139
78.23983813151023
78.23983813149661
78.23983813135898
78.23983812998814
78.23983811628078
78.23983797920721
78.2398366084616
78.23982290141974
78.23968587173026
78.14283730517688
78.1428373051768
78.14283730517596
78.14283730516753
78.14283730508302
78.14283730423438
78.14283729575347
78.14283721094532
78.14283636285828
78.14282788202375
78.14274307684072
78.13483210383205
78.13483210383193
78.13483210383083
78.13483210382043
78.13483210371508
78.13483210266394
78.1348320921473
78.13483198698974
78.13483093541167
78.13471525812804
78.13482041959485
78.11864791825516
78.1186479182551
78.11864791825418
78.11864791824624
78.11864791816375
78.11864791733743
78.11864790908172
78.1186478265194
78.11864700089889
78.11863874474794
78.11855618838528
78.14529966934955
78.14529966934951
78.14529966934862
78.14529966933905

78.14529966924476
78.1452996683012
78.14529965886517
78.14529956450333
78.1452986208901
78.1452891851327
78.1451948650062
78.12587327462724
78.12587327462722
78.12587327462629
78.12587327461752
78.1258732745315
78.12587327366383
78.12587326498816
78.12587317823571
78.12587231071075
78.12586363558208
78.12577689651472
78.33064718793351
78.33064718793347
78.33064718793234
78.33064718792257
78.33064718782438
78.33064718684726
78.33064717707545
78.33064707935533
78.3306461021568
78.33063633021094
78.33053861448789
78.68691419917006
78.68691419916992
78.68691419916895
78.68691419915969
78.68691419907056
78.68691419817404
78.68691418920669
78.68691409953588
78.6869132028263
78.68690423575248
78.68681456726476
79.40768706870938
79.4076870687093
79.40768706870826
79.40768706869838
79.40768706859795
79.40768706759452
79.40768705756791
79.40768695729372
79.40768595455596
79.40767592720249
79.40757565608358
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78.93688212674513
78.93688212674397
78.93688212673405
78.93688212663493

78.93688212564086
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78.93687107868227
78.93677164890927
80.56444650669573
80.56444650669557
80.56444650669445
80.5644465066833
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80.5644465054604
80.56444649433693
80.5644463831118
80.56444527085577
80.56443414831875
80.56432292550818
86.74477855171482
86.74477855171466
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86.74477855169805
86.74477855154717
86.74477855004257
86.7447785349855
86.74477838442427
86.74477687881246
86.74476182270848
86.74461126357488

Mean absolute error:
2-dimensional space:
 - 1. dimension: classifier.ridge, min: -12.0, max: -2.0, step: 1.0
 - 2. dimension: classifier.maxIts, min: 1.0, max: 15.0, step: 1.0
0.15132690305142782
0.15132690305142824
0.15132690305143154
0.15132690305146773
0.1513269030518251
0.1513269030554095
0.15132690309123764
0.1513269034495089
0.15132690703215854
0.15132694285066964
0.1513273002353611
0.15172760381510847
0.15172760381510833
0.15172760381511052
0.1517276038151422
0.15172760381544018
0.15172760381842026
0.15172760384819517
0.15172760414596642
0.151727607123608
0.1517276368941316

```
0.1517279340053501
0.15181825276614708
0.15181825276614686
0.1518182527661487
0.1518182527661714
0.15181825276641447
0.15181825276882352
0.15181825279291764
0.15181825303382687
0.151818255442889
0.15181827952772148
0.15181851979710936
0.1518107847312798
0.15181078473128007
0.151810784731281
0.15181078473130277
0.15181078473152365
0.15181078473370765
0.15181078475552984
0.1518107849737694
0.1518107871560964
0.1518108089736215
0.15181102657069742
0.15090516984143484
0.1509051698414355
0.15090516984144006
0.15090516984148825
0.15090516984197289
0.15090516984682054
0.1509051698953073
0.1509051703801815
0.15090517522890717
0.15090522371635606
0.15090570860833566
0.1509524600079616
0.15095246000796247
0.1509524600079685
0.15095246000802928
0.15095246000864138
0.15095246001477533
0.1509524600760995
0.15095246068936666
0.15095246682204516
0.15095314182366062
0.1509525281525056
0.15091948165665975
0.15091948165665978
0.15091948165666447
0.15091948165670613
0.15091948165711455
0.1509194816611884
0.1509194817019179
0.1509194821092573
0.15091948618262505
0.15091952691585986
0.15091993420486077
```

```
0.15133216312038023
0.15133216312037956
0.15133216312038375
0.1513321631204229
0.15133216312081985
0.15133216312476747
0.1513321631642697
0.15133216355928822
0.15133216750939665
0.15133220700474573
0.1513326013810535
0.1515536873285514
0.15155368732855226
0.15155368732855973
0.15155368732863514
0.1515536873293863
0.15155368733687996
0.15155368741183603
0.15155368816141176
0.15155369565720575
0.1515537706189286
0.15155452061507813
0.15219556283463423
0.15219556283463467
0.15219556283463762
0.15219556283467583
0.15219556283503452
0.1521955628386243
0.1521955628745169
0.15219556323348032
0.15219556682308458
0.15219560271905844
0.15219596167088695
0.15081369198570393
0.1508136919857042
0.15081369198570893
0.15081369198576214
0.1508136919862903
0.1508136919915865
0.15081369204452846
0.1508136925739458
0.15081369786812918
0.15081375080996015
0.1508142802288729
0.15217945077550066
0.1521794507755014
0.15217945077550718
0.15217945077555906
0.15217945077606543
0.15217945078115896
0.15217945083207787
0.152179451341273
0.15217945643321135
0.15217950735260438
0.15218001654579294
0.1535187420060649
```

0.1535187420060654
0.1535187420060696
0.1535187420061068
0.153518742006498
0.15351874201039245
0.15351874204932067
0.15351874243863747
0.15351874633179957
0.15351878526343563
0.15351917458084227
0.15972899142852187
0.15972899142852226
0.1597289914285275
0.1597289914285802
0.15972899142911492
0.1597289914344545
0.15972899148785105
0.1597289920218191
0.15972899736148438
0.15972905075816474
0.15972958472547466
0.20467779278251924
0.2046777927825193
0.2046777927825209
0.20467779278253959
0.20467779278271403
0.20467779278444848
0.20467779280182036
0.20467779297551583
0.20467779471246988
0.20467781208201602
0.20467798577851942

Root absolute error:
2-dimensional space:
 - 1. dimension: classifier.ridge, min: -12.0, max: -2.0, step: 1.0
 - 2. dimension: classifier.maxIts, min: 1.0, max: 15.0, step: 1.0
46.080521983504454
46.080521983504575
46.080521983505584
46.080521983516604
46.08052198362543
46.08052198471691
46.080521995626924
46.08052210472403
46.08052319567589
46.08053410276283
46.08064292989666
46.20253928497078
46.20253928497075
46.202539284971415
46.20253928498106
46.20253928507179
46.20253928597926

46.20253929504601
46.20253938572027
46.20254029244152
46.202549357856846
46.20263983112868
46.230142777125096
46.230142777125025
46.23014277712559
46.23014277713251
46.230142777206524
46.2301427779401
46.23014278527699
46.23014285863621
46.230143592219186
46.230150926286235
46.23022409066473
46.22786868746928
46.22786868746937
46.22786868746966
46.22786868747628
46.22786868754354
46.227868688208595
46.22786869485366
46.22786876130974
46.227869425849654
46.22787606949943
46.227942329937186
45.9521000964349
45.9521000964351
45.95210009643649
45.95210009645116
45.95210009659874
45.9521000980749
45.95210011283959
45.95210026048853
45.952101736972914
45.95211650187532
45.95226415622543
45.966500414648635
45.966500414648905
45.96650041465074
45.96650041466925
45.96650041485563
45.966500416723484
45.96650043539729
45.96650062214314
45.96650248960373
45.96670803419727
45.96652116532875
45.95645818414302
45.95645818414302
45.956458184144445
45.956458184157135
45.95645818428151
45.95645818552203
45.95645819792456

45.95645832196339
45.95645956234371
45.95647196601209
45.95659598949622
46.08212372594488
46.082123725944676
46.08212372594595
46.08212372595788
46.08212372607875
46.08212372728084
46.08212373930966
46.082123859596656
46.0821250624433
46.08213708916337
46.08225718060616
46.14958001387962
46.149580013879884
46.14958001388216
46.14958001390512
46.14958001413385
46.149580016415754
46.149580039240604
46.149580267493754
46.14958255003633
46.149605376614076
46.149833757776705
46.345037383139804
46.34503738313994
46.34503738314084
46.34503738315247
46.3450373832617
46.34503738435482
46.34503739528447
46.34503750459234
46.34503859766195
46.34504952833705
46.345158832679445
45.92424419469494
45.92424419469503
45.92424419469647
45.92424419471267
45.9242441948735
45.92424419648625
45.92424421260759
45.92424437382035
45.92424598595096
45.924262107256276
45.92442332049302
46.340131103554796
46.340131103555024
46.34013110355678
46.340131103572574
46.340131103726776
46.34013105277806
46.34013112078311
46.340131275838004

46.340132826383034
46.34014833183621
46.340303386142125
46.747958381770864
46.74795838177102
46.74795838177229
46.74795838178362
46.74795838190275
46.747958383088644
46.747958394942664
46.747958513493444
46.747959698999374
46.74797155406331
46.74809010502123
48.639040068265956
48.63904006826608
48.639040068267676
48.63904006828373
48.63904006844655
48.639040070072504
48.63904008633227
48.63904024893076
48.63904187491107
48.63905813472247
48.63922073299064
62.326389687924404
62.32638968792441
62.32638968792491
62.32638968793059
62.32638968798372
62.326389688511874
62.32638969380178
62.32638974669375
62.32639027561325
62.326395564809914
62.32644845709399

Combined = (1-abs(CC)) + RRSE + RAE:
2-dimensional space:
 - 1. dimension: classifier.ridge, min: -12.0, max: -2.0, step: 1.0
 - 2. dimension: classifier.maxIts, min: 1.0, max: 15.0, step: 1.0
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Accuracy:
2-dimensional space:
 - 1. dimension: classifier.ridge, min: -12.0, max: -2.0, step: 1.0
 - 2. dimension: classifier.maxIts, min: 1.0, max: 15.0, step: 1.0
87.62685617896746
87.62685617896746
87.62685617896746
87.62685617896746
87.62685617896746
87.62685617896746
87.62685617896746
87.62685617896746
87.62685617896746

87.62685617896746
87.62685617896746
87.62132566435307
87.62132566435307
87.62132566435307
87.62132566435307
87.62132566435307
87.62132566435307
87.62132566435307
87.62132566435307
87.62132566435307
87.62132566435307
87.61441252108509
87.61441252108509
87.61441252108509
87.61441252108509
87.61441252108509
87.61441252108509
87.61441252108509
87.61441252108509
87.61441252108509
87.61441252108509
87.61441252108509
87.60058623454913
87.60058623454913
87.60058623454913
87.60058623454913
87.60058623454913
87.60058623454913
87.60058623454913
87.60058623454913
87.60058623454913
87.60058623454913
87.59920360589553
87.59643834858834
87.59643834858834
87.59643834858834
87.59643834858834
87.59643834858834
87.59643834858834
87.59643834858834
87.59643834858834
87.59643834858834
87.59643834858834
87.59090783397396
87.59090783397396
87.59090783397396
87.59090783397396
87.59090783397396
87.59090783397396
87.59090783397396
87.59090783397396
87.59090783397396

87.58952520532036
87.58122943339878
87.58122943339878
87.58122943339878
87.58122943339878
87.58122943339878
87.58122943339878
87.58122943339878
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87.58122943339878
87.58122943339878
87.58122943339878
87.58122943339878
87.58122943339878
87.5715510328236
87.5715510328236
87.5715510328236
87.5715510328236
87.5715510328236
87.5715510328236
87.5715510328236
87.5715510328236
87.5715510328236
87.5715510328236
87.57016840417
87.51624588667976
87.51624588667976
87.51624588667976
87.51624588667976
87.51624588667976
87.51624588667976
87.51624588667976
87.51624588667976
87.51624588667976
87.51624588667976
87.43328816746399
87.43328816746399
87.43328816746399
87.43328816746399
87.43328816746399
87.43328816746399
87.43328816746399
87.43328816746399
87.43328816746399
87.43328816746399
87.43328816746399

87.3876614218953
87.3876614218953
87.3876614218953
87.3876614218953
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87.3876614218953
87.3876614218953
87.3876614218953
87.3876614218953
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87.3876614218953
87.3876614218953
87.3876614218953
87.3876614218953
87.3876614218953
87.3876614218953
86.93830710947654
86.93830710947654
86.93830710947654
86.93830710947654
86.93830710947654
86.93830710947654
86.93830710947654
86.93830710947654
86.93830710947654
86.93830710947654
83.98501230539502
83.98501230539502
83.98501230539502
83.98501230539502
83.98501230539502
83.98501230539502
83.98501230539502
83.98501230539502
83.98501230539502
83.98501230539502

Kappa:
2-dimensional space:
 - 1. dimension: classifier.ridge, min: -12.0, max: -2.0, step: 1.0
 - 2. dimension: classifier.maxIts, min: 1.0, max: 15.0, step: 1.0
0.5900201052790287
0.5900201052790287
0.5900201052790287
0.5900201052790287
0.5900201052790287

```
0.5900201052790287
0.5900201052790287
0.5900201052790287
0.5900201052790287
0.5900201052790287
0.5900201052790287
0.5912411207191749
0.5912411207191749
0.5912411207191749
0.5912411207191749
0.5912411207191749
0.5912411207191749
0.5912411207191749
0.5912411207191749
0.5912411207191749
0.5910237794117833
0.5910237794117833
0.5910237794117833
0.5910237794117833
0.5910237794117833
0.5910237794117833
0.5910237794117833
0.5910237794117833
0.5910237794117833
0.5910237794117833
0.5901726145546181
0.5901726145546181
0.5901726145546181
0.5901726145546181
0.5901726145546181
0.5901726145546181
0.5901726145546181
0.5901726145546181
0.5901726145546181
0.5901378887513777
0.5897169724954326
0.5897169724954326
0.5897169724954326
0.5897169724954326
0.5897169724954326
0.5897169724954326
0.5897169724954326
0.5897169724954326
0.5897169724954326
0.5897169724954326
0.5897169724954326
0.589490039250108
0.589490039250108
0.589490039250108
0.589490039250108
0.589490039250108
0.589490039250108
```

```
0.589490039250108
0.589490039250108
0.589490039250108
0.5895120383129134
0.5894553010304632
0.589466884367036
0.589466884367036
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0.589466884367036
0.589466884367036
0.589466884367036
0.589466884367036
0.5887841981331156
0.5887841981331156
0.5887841981331156
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0.5887841981331156
0.5887841981331156
0.5887841981331156
0.5887841981331156
0.5887841981331156
0.5889818543106562
0.5889818543106562
0.5889818543106562
0.5889818543106562
0.5889818543106562
0.5889818543106562
0.5889818543106562
0.5889818543106562
0.5889818543106562
0.5889471408700638
0.5892434776141376
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0.5892434776141376
0.5892434776141376
0.585851623886086
0.585851623886086
0.585851623886086
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```

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0.585851623886086
0.585851623886086
0.585851623886086
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0.5813191061798803
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0.5813191061798803
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0.5813191061798803
0.5813191061798803
0.5813191061798803
0.5813191061798803
0.5860386845947021
0.5860386845947021
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0.5860386845947021
0.5860386845947021
0.5750745364619615
0.5750745364619615
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0.5750745364619615
0.5422096461772593
0.5422096461772593
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0.5422096461772593
0.5422096461772593


Best performance:
Performance (-2, 1): 83.98501230539502 (ACC)

Result of Step 1: -12, 11
```

=== Initial space - End ===

Center is on border of space.

Final result:-12, 11
Classifier: weka.classifiers.functions.Logistic -R 1.0E-12 -M 11
Shutting down thread pool...
Shutting down thread pool...
Starting thread pool with 1 slots...

weka.classifiers.meta.MultiSearch
=================================
Options: -E ACC -search "weka.core.setupgenerator.MathParameter -property classifier.ridge
-min -12.0 -max -2.0 -step 1.0 -base 10.0 -expression pow(BASE,I)" -search
"weka.core.setupgenerator.MathParameter -property classifier.maxIts -min 1.0 -max 15.0 -step
1.0 -base 10.0 -expression I" -sample-size 100.0 -log-file C:\Users\Su\Desktop\log.txt
-initial-folds 10 -subsequent-folds 10 -num-slots 1 -S 1 -W
weka.classifiers.functions.Logistic -- -R 1.0E-8 -M -1

Step 1:

=== Initial space - Start ===
Determining best values with 10-fold CV in space:
2-dimensional space:
 - 1. dimension: classifier.ridge, min: -12.0, max: -2.0, step: 1.0
 - 2. dimension: classifier.maxIts, min: 1.0, max: 15.0, step: 1.0

Performance (-12, 1): 84.29785076736361 (ACC): cached=false
Performance (-11, 1): 84.29785076736361 (ACC): cached=false
Performance (-10, 1): 84.29785076736361 (ACC): cached=false
Performance (-9, 1): 84.29785076736361 (ACC): cached=false
Performance (-8, 1): 84.29785076736361 (ACC): cached=false
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Performance (-12, 3): 87.35962392269522 (ACC): cached=false
Performance (-11, 3): 87.35962392269522 (ACC): cached=false
Performance (-10, 3): 87.35962392269522 (ACC): cached=false
Performance (-9, 3): 87.35962392269522 (ACC): cached=false
Performance (-8, 3): 87.35962392269522 (ACC): cached=false
Performance (-7, 3): 87.35962392269522 (ACC): cached=false

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Performance (-2, 3): 87.35962392269522 (ACC): cached=false
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Performance (-7, 4): 87.37498655769437 (ACC): cached=false
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Performance (-3, 4): 87.37498655769437 (ACC): cached=false
Performance (-2, 4): 87.37498655769437 (ACC): cached=false
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Performance (-10, 5): 87.41646567219209 (ACC): cached=false
Performance (-9, 5): 87.41646567219209 (ACC): cached=false
Performance (-8, 5): 87.41646567219209 (ACC): cached=false
Performance (-7, 5): 87.41646567219209 (ACC): cached=false
Performance (-6, 5): 87.41646567219209 (ACC): cached=false
Performance (-5, 5): 87.41646567219209 (ACC): cached=false
Performance (-4, 5): 87.41646567219209 (ACC): cached=false
Performance (-3, 5): 87.41646567219209 (ACC): cached=false
Performance (-2, 5): 87.41646567219209 (ACC): cached=false
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Performance (-10, 6): 87.5255403806861 (ACC): cached=false
Performance (-9, 6): 87.5255403806861 (ACC): cached=false
Performance (-8, 6): 87.5255403806861 (ACC): cached=false
Performance (-7, 6): 87.5255403806861 (ACC): cached=false
Performance (-6, 6): 87.5255403806861 (ACC): cached=false
Performance (-5, 6): 87.5255403806861 (ACC): cached=false
Performance (-4, 6): 87.5255403806861 (ACC): cached=false
Performance (-3, 6): 87.5255403806861 (ACC): cached=false
Performance (-2, 6): 87.5255403806861 (ACC): cached=false
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Performance (-11, 7): 87.58238213018296 (ACC): cached=false
Performance (-10, 7): 87.58238213018296 (ACC): cached=false
Performance (-9, 7): 87.58238213018296 (ACC): cached=false
Performance (-8, 7): 87.58238213018296 (ACC): cached=false
Performance (-7, 7): 87.58238213018296 (ACC): cached=false
Performance (-6, 7): 87.58238213018296 (ACC): cached=false
Performance (-5, 7): 87.58238213018296 (ACC): cached=false
Performance (-4, 7): 87.58238213018296 (ACC): cached=false
Performance (-3, 7): 87.58238213018296 (ACC): cached=false
Performance (-2, 7): 87.58238213018296 (ACC): cached=false
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Performance (-11, 8): 87.55933817768424 (ACC): cached=false
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Performance (-9, 8): 87.55933817768424 (ACC): cached=false
Performance (-8, 8): 87.55933817768424 (ACC): cached=false
Performance (-7, 8): 87.55933817768424 (ACC): cached=false
Performance (-6, 8): 87.55933817768424 (ACC): cached=false
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Performance (-3, 8): 87.55933817768424 (ACC): cached=false
Performance (-2, 8): 87.55933817768424 (ACC): cached=false
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Performance (-11, 9): 87.53322169818567 (ACC): cached=false
Performance (-10, 9): 87.53322169818567 (ACC): cached=false
Performance (-9, 9): 87.53322169818567 (ACC): cached=false
Performance (-8, 9): 87.53322169818567 (ACC): cached=false
Performance (-7, 9): 87.53322169818567 (ACC): cached=false
Performance (-6, 9): 87.53322169818567 (ACC): cached=false
Performance (-5, 9): 87.53322169818567 (ACC): cached=false
Performance (-4, 9): 87.53322169818567 (ACC): cached=false
Performance (-3, 9): 87.53322169818567 (ACC): cached=false
Performance (-2, 9): 87.53322169818567 (ACC): cached=false
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Performance (-10, 10): 87.55319312368458 (ACC): cached=false
Performance (-9, 10): 87.55319312368458 (ACC): cached=false
Performance (-8, 10): 87.55319312368458 (ACC): cached=false
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Performance (-5, 10): 87.55319312368458 (ACC): cached=false
Performance (-4, 10): 87.55319312368458 (ACC): cached=false
Performance (-3, 10): 87.55319312368458 (ACC): cached=false
Performance (-2, 10): 87.55319312368458 (ACC): cached=false
Performance (-12, 11): 87.57470081268339 (ACC): cached=false
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Performance (-10, 11): 87.57470081268339 (ACC): cached=false
Performance (-9, 11): 87.57470081268339 (ACC): cached=false
Performance (-8, 11): 87.57470081268339 (ACC): cached=false
Performance (-7, 11): 87.57470081268339 (ACC): cached=false
Performance (-6, 11): 87.57470081268339 (ACC): cached=false
Performance (-5, 11): 87.57470081268339 (ACC): cached=false
Performance (-4, 11): 87.57470081268339 (ACC): cached=false
Performance (-3, 11): 87.57470081268339 (ACC): cached=false
Performance (-2, 11): 87.57470081268339 (ACC): cached=false
Performance (-12, 12): 87.57316454918347 (ACC): cached=false
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Performance (-10, 12): 87.57316454918347 (ACC): cached=false
Performance (-9, 12): 87.57316454918347 (ACC): cached=false
Performance (-8, 12): 87.57316454918347 (ACC): cached=false
Performance (-7, 12): 87.57316454918347 (ACC): cached=false
Performance (-6, 12): 87.57316454918347 (ACC): cached=false
Performance (-5, 12): 87.57316454918347 (ACC): cached=false
Performance (-4, 12): 87.57316454918347 (ACC): cached=false
Performance (-3, 12): 87.57316454918347 (ACC): cached=false
Performance (-2, 12): 87.57316454918347 (ACC): cached=false
Performance (-12, 13): 87.56855575868373 (ACC): cached=false
Performance (-11, 13): 87.56855575868373 (ACC): cached=false
Performance (-10, 13): 87.56855575868373 (ACC): cached=false
Performance (-9, 13): 87.56855575868373 (ACC): cached=false
Performance (-8, 13): 87.56855575868373 (ACC): cached=false
Performance (-7, 13): 87.56855575868373 (ACC): cached=false
Performance (-6, 13): 87.56855575868373 (ACC): cached=false
Performance (-5, 13): 87.56855575868373 (ACC): cached=false
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Performance (-4, 13): 87.56855575868373 (ACC): cached=false
Performance (-3, 13): 87.56855575868373 (ACC): cached=false
Performance (-2, 13): 87.56855575868373 (ACC): cached=false
Performance (-12, 14): 87.57316454918347 (ACC): cached=false
Performance (-11, 14): 87.57316454918347 (ACC): cached=false
Performance (-10, 14): 87.57316454918347 (ACC): cached=false
Performance (-9, 14): 87.57316454918347 (ACC): cached=false
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Performance (-6, 14): 87.57316454918347 (ACC): cached=false
Performance (-5, 14): 87.57316454918347 (ACC): cached=false
Performance (-4, 14): 87.57316454918347 (ACC): cached=false
Performance (-3, 14): 87.57316454918347 (ACC): cached=false
Performance (-2, 14): 87.57316454918347 (ACC): cached=false
Performance (-12, 15): 87.5946722381823 (ACC): cached=false
Performance (-11, 15): 87.5946722381823 (ACC): cached=false
Performance (-10, 15): 87.5946722381823 (ACC): cached=false
Performance (-9, 15): 87.5946722381823 (ACC): cached=false
Performance (-8, 15): 87.5946722381823 (ACC): cached=false
Performance (-7, 15): 87.5946722381823 (ACC): cached=false
Performance (-6, 15): 87.5946722381823 (ACC): cached=false
Performance (-5, 15): 87.5946722381823 (ACC): cached=false
Performance (-4, 15): 87.5946722381823 (ACC): cached=false
Performance (-3, 15): 87.5946722381823 (ACC): cached=false
Performance (-2, 15): 87.5946722381823 (ACC): cached=false


Correlation coefficient:
2-dimensional space:
 - 1. dimension: classifier.ridge, min: -12.0, max: -2.0, step: 1.0
 - 2. dimension: classifier.maxIts, min: 1.0, max: 15.0, step: 1.0
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Root mean squared error:
2-dimensional space:
 - 1. dimension: classifier.ridge, min: -12.0, max: -2.0, step: 1.0
 - 2. dimension: classifier.maxIts, min: 1.0, max: 15.0, step: 1.0
0.314815015609582
0.31481501560958125
0.31481501560957653
0.3148150156095286
0.31481501560903885
0.3148150156041609
0.3148150155553659
0.31481501506740495
0.31481501018781227
0.3148149613926577
0.31481447351743
0.31480341574110815
0.31480341574110776
0.314803415741105
0.31480341574107495
0.3148034157407691
0.314803415737705
0.3148034157070639
0.31480341540064993
0.31480341233651643
0.3148033816953192
0.31480307529729623

0.31456192542277195
0.31456192542277195
0.3145619254227686
0.31456192542273503
0.3145619254224058
0.3145619254191063
0.3145619253861176
0.314561925056238
0.3145619217574151
0.31456188876952396
0.31456155892371473
0.3146307039143973
0.31463070391439646
0.31463070391439324
0.3146307039143558
0.3146307039139846
0.31463070391028664
0.3146307038732969
0.31463070350340805
0.31463069980451835
0.31463066281608537
0.31463029297870065
0.31482906255387527
0.3148290625538749
0.3148290625538709
0.314829062553823
0.31482906255335796
0.31482906254871196
0.314829062502237
0.3148290620374823
0.3148290573899545
0.31482901091538473
0.31482854624118367
0.31482440838654524
0.31482440838654485
0.3148244083865401
0.3148244083864962
0.31482440838606407
0.31482440838175574
0.3148244083386545
0.3148244079076477
0.31482440359755737
0.3148243604972713
0.3148239295532848
0.3146930131958772
0.31469301319587706
0.3146930131958743
0.3146930131958442
0.31469301319554205
0.3146930131925327
0.3146930131624351
0.31469301286146745
0.3146930098517729
0.3146929797549989
0.3146926788016538
0.3146042601218539

0.3146042601218537
0.3146042601218505
0.3146042601218198
0.3146042601215226
0.31460426011856
0.3146042600889251
0.31460425979256157
0.31460425682894116
0.3146042271930976
0.31460393087097144
0.3147030053990213
0.31470300539902096
0.31470300539901863
0.314703005398674
0.3147030053986874
0.3147030053957
0.31470300536581036
0.31470300506689886
0.3147030020778042
0.3147029721871384
0.3147026733079102
0.31544182372266416
0.3154418237226637
0.31544182372266
0.31544182372262664
0.315441823722291
0.31544182371894075
0.3154418236854346
0.315441823350370
0.31544181999969134
0.31544178649315213
0.31544145144666563
0.3167143778861214
0.3167143778861211
0.3167143778861181
0.316714377886083
0.3167143778857382
0.3167143778822923
0.3167143778478286
0.31671437750319803
0.31671437405688396
0.31671433959384854
0.31671399497214753
0.3176184819942719
0.3176184819942715
0.31761848199426906
0.31761848199423287
0.317618481993868
0.31761848199023673
0.3176184819539227
0.3176184815907897
0.3176184779594656
0.31761844164632014
0.3176180785252317
0.3194355961211943
0.3194355961211938

0.3194355961211905
0.31943559612115346
0.3194355961207823
0.31943559611706657
0.3194355960799213
0.31943559570845614
0.31943559199381
0.3194355548474389
0.31943518339285937
0.32482764577939827
0.3248276457793979
0.3248276457793936
0.324827645779352
0.3248276457789303
0.32482764577473033
0.32482764573272166
0.32482764531262853
0.3248276411117178
0.32482759910271236
0.32482717902304875
0.346991235674664
0.34699123567466333
0.34699123567465734
0.3469912356746013
0.34699123567403994
0.34699123566842305
0.3469912356122653
0.34699123505069185
0.34699122943494126
0.34699117327753254
0.34699061171120804

Root relative squared error:
2-dimensional space:
 - 1. dimension: classifier.ridge, min: -12.0, max: -2.0, step: 1.0
 - 2. dimension: classifier.maxIts, min: 1.0, max: 15.0, step: 1.0
77.69214823489872
77.69214823489853
77.69214823489736
77.69214823488554
77.69214823476467
77.69214823356086
77.69214822151889
77.69214810109663
77.69214689687823
77.6921348548847
77.69201445378364
77.68928554202738
77.68928554202728
77.68928554202658
77.68928554201918
77.6892855419437
77.68928554118752
77.6892855336257

77.68928545800682
77.68928470181953
77.6892771399806
77.68920152503394
77.62968895139734
77.62968895139734
77.62968895139653
77.62968895138823
77.62968895130699
77.62968895049272
77.62968894235155
77.62968886094166
77.62968804683615
77.62967990586446
77.62959850431677
77.64666256606557
77.64666256606537
77.64666256606458
77.64666256605534
77.64666256596372
77.64666256505112
77.64666255592255
77.64666246463891
77.64666155180225
77.64665242355018
77.6465611526149
77.69561483345394
77.69561483345385
77.69561483345286
77.69561483344104
77.69561483332629
77.69561483217971
77.69561482071032
77.69561470601505
77.69561355906716
77.69560208976301
77.69548741436597
77.69446624701371
77.69446624701361
77.69446624701243
77.69446624700161
77.69446624689496
77.69446624583172
77.69446623519491
77.69446612882818
77.69446506515536
77.69445442857943
77.6943480773496
77.66203966592778
77.66203966592774
77.66203966592705
77.66203966591964
77.66203966584506
77.66203966510238
77.66203965767471
77.6620395833999

77.66203884064743
77.66203141316488
77.66195714189212
77.64013659065681
77.64013659065678
77.64013659065598
77.64013659064841
77.64013659057505
77.64013658984393
77.64013658253045
77.64013650939187
77.64013577800986
77.64012846427883
77.64005533592913
77.6645056084317
77.66450560843161
77.66450560843104
77.66450560842316
77.66450560834929
77.66450560761204
77.66450560023567
77.6645055264683
77.6645047887996
77.66449741218183
77.66442365277344
77.84683611959862
77.8468361195985
77.8468361195976
77.84683611958937
77.84683611950653
77.84683611867973
77.84683611041086
77.84683602772154
77.84683520081857
77.84682693185145
77.84674424684596
78.16088551941145
78.16088551941138
78.16088551941064
78.16088551940197
78.16088551931689
78.16088551846649
78.1608855099613
78.16088542491107
78.16088457440672
78.16087606938909
78.16079102134833
78.3840063583403
78.38400635834022
78.38400635833962
78.38400635833068
78.38400635824064
78.38400635734449
78.38400634838267
78.38400625876628
78.38400536260392

```
78.3839964010038
78.38390678756089
78.83244589619153
78.83244589619142
78.83244589619059
78.83244589618145
78.83244589608985
78.83244589517285
78.8324458860059
78.83244579433325
78.83244487760811
78.83243571037902
78.83234404034162
80.16313185640202
80.16313185640192
80.16313185640087
80.16313185639059
80.16313185628653
80.16313185525003
80.16313184488284
80.16313174120947
80.16313070448072
80.1631203372183
80.1630166671585
85.63281032210757
85.6328103221074
85.63281032210593
85.63281032209208
85.63281032195356
85.63281032056739
85.6328103067084
85.63281016811955
85.63280878222719
85.63279492332751
85.63265633624631
```

```
Mean absolute error:
2-dimensional space:
  - 1. dimension: classifier.ridge, min: -12.0, max: -2.0, step: 1.0
  - 2. dimension: classifier.maxIts, min: 1.0, max: 15.0, step: 1.0
0.15600550727347584
0.15600550727347612
0.15600550727348073
0.15600550727351803
0.1560055072739291
0.156005507278033
0.15600550731904703
0.15600550772918378
0.15600551183055436
0.15600555284424675
0.15600596297824407
0.15584213040366324
0.1558421304036636
0.1558421304036882
```

0.15584213040371797
0.1558421304042324
0.15584213040937225
0.15584213046075146
0.15584213097456215
0.15584213611265874
0.15584218749340056
0.15584270127996122
0.155982052451404
0.15598205245140442
0.15598205245140928
0.1559820524514533
0.15598205245192148
0.15598205245660093
0.15598205250338526
0.15598205297123752
0.15598205764975837
0.15598210443476962
0.15598257226767695
0.15585132157857082
0.15585132157857118
0.1558513215785773
0.15585132157862566
0.15585132157913795
0.15585132158426374
0.15585132163552323
0.15585132214811048
0.15585132727399784
0.1558513785324575
0.15585189107602693
0.15605791135516342
0.15605791135516386
0.1560579113551687
0.1560579113552067
0.1560579113556133
0.1560579113596607
0.15605791140014297
0.15605791180496204
0.15605791585316695
0.156057956335149
0.1560583611472976
0.1560830276095159
0.15608302760951587
0.15608302760952075
0.15608302760956108
0.15608302761000675
0.1560830276144458
0.1560830276588261
0.1560830281026378
0.1560830325407541
0.15608307692171003
0.15608352071074605
0.15529970049627906
0.15529970049627936
0.15529970049628333
0.15529970049631514

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0.15529970049664002
0.15529970049989159
0.15529970053240819
0.15529970085755457
0.15529970410904048
0.15529973662390895
0.15530006177416605
0.1559590143986663
0.15595901439866652
0.155959014398673
0.15595901439873505
0.1559590143993616
0.15595901440563267
0.1559590144683213
0.1559590150951901
0.1559590213639007
0.15595908405004427
0.15595971081763774
0.1564835336744902
0.15648353367449042
0.15648353367449644
0.15648353367455156
0.1564835336751101
0.15648353368068096
0.15648353373639845
0.15648353429358233
0.15648353986541827
0.1564835955828371
0.15648415266370042
0.15668882528887224
0.15668882528887276
0.15668882528887582
0.15668882528890268
0.15668882528918424
0.1566888252920119
0.15668882532029027
0.15668882560306638
0.1566888284308122
0.15668885670816804
0.15668913947072513
0.1549037726561268
0.15490377265612723
0.1549037726561327
0.15490377265619218
0.15490377265677274
0.1549037726625918
0.15490377272078643
0.15490377330270688
0.1549037791219435
0.15490383731428944
0.15490441923890746
0.1568065910155189
0.15680659101551933
0.15680659101552424
0.15680659101556646
0.1568065910159838
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0.1568065910201566
0.15680659106186887
0.15680659147898787
0.1568065956501783
0.1568066373621084
0.15680705448200188
0.15638018045745508
0.15638018045745564
0.15638018045746152
0.15638018045751734
0.15638018045807067
0.15638018046359997
0.15638018051886912
0.15638018107157578
0.15638018659865405
0.1563802418693977
0.1563807945747169
0.16574775553636015
0.16574775553636048
0.16574775553636587
0.16574775553642238
0.1657477555369766
0.16574775554254262
0.1657477555981735
0.16574775615450432
0.1657477617177916
0.16574781735068173
0.16574837367895473
0.20634899631306908
0.20634899631306924
0.20634899631307166
0.20634899631309617
0.20634899631329945
0.20634899631535672
0.20634899633594728
0.20634899654183658
0.20634899860072256
0.20634901918959458
0.206349225078833

Root absolute error:
2-dimensional space:
 - 1. dimension: classifier.ridge, min: -12.0, max: -2.0, step: 1.0
 - 2. dimension: classifier.maxIts, min: 1.0, max: 15.0, step: 1.0
47.50568344721354
47.50568344721362
47.50568344721502
47.50568344722638
47.50568344735156
47.50568344860125
47.50568346109055
47.50568358598247
47.50568483490256
47.505697324099394

47.50582221517656
47.455933089065546
47.45593308906566
47.455933089067244
47.455933089082215
47.45593308923887
47.45593309080402
47.45593310644965
47.455933262911614
47.455934827528104
47.45595047362483
47.45610692824067
47.498541152225826
47.498541152225954
47.49854115222743
47.49854115224083
47.498541152383396
47.498541153808354
47.498541168054786
47.498541310521816
47.498542735191585
47.49855698182924
47.49869944296661
47.45873192003824
47.458731920038346
47.45873192004022
47.45873192005494
47.45873192021094
47.45873192177181
47.45873193738098
47.458732093470395
47.45873365436902
47.45874926322926
47.45890533933828
47.521641164088415
47.52164116408855
47.52164116409002
47.521641164101595
47.521641164225414
47.5216411654579
47.52164117778527
47.521641301057876
47.521642533788345
47.52165486107254
47.52177813157833
47.52928938657429
47.52928938657428
47.52928938657576
47.52928938658805
47.52928938672376
47.529289388075505
47.52928940158988
47.52928953673625
47.52929088819974
47.529304402771636
47.52943954224095

47.29075620574359
47.29075620574368
47.29075620574489
47.290756205754576
47.29075620585505
47.290756206843646
47.29075621674537
47.290756315756624
47.290757305875914
47.290767207071546
47.290866219506796
47.491525768860676
47.49152576886075
47.491525768862715
47.49152576888161
47.4915257690724
47.49152577098203
47.49152579007152
47.491525980961136
47.49152788986414
47.4915469786011
47.491737837394545
47.65124863451292
47.65124863451299
47.65124863451482
47.651248634531605
47.65124863470169
47.651248636398094
47.6512486336478
47.651248823034436
47.65125051973014
47.65126748640079
47.65143712468863
47.713762571473524
47.71376257147369
47.71376257147461
47.713762571482796
47.71376257156853
47.71376257242959
47.71376258104072
47.71376266714968
47.71376352823465
47.7137721390532
47.713858243888616
47.170191086146616
47.17019108614675
47.17019108614842
47.17019108616653
47.17019108634332
47.170191088115295
47.17019110583631
47.17019128303857
47.17019305507097
47.17021077538875
47.17038797891943
47.74962374989461

47.74962374989475
47.749623749896244
47.7496237499091
47.749623750036186
47.749623751306856
47.74962376400878
47.74962389102688
47.749625161208016
47.74963786302721
47.74976488139961
47.61977625063666
47.61977625063683
47.61977625063862
47.61977625065562
47.61977625082412
47.61977625250786
47.619776269338026
47.61977643764431
47.619778120710734
47.61979495136305
47.61996325724142
50.47232334428745
50.47232334428755
50.472323344289194
50.472323344306396
50.472323344475164
50.47232334617009
50.47232336311041
50.4723235325203
50.47232522661283
50.4723421675434
50.47251157665781
62.835923358236236
62.835923358236286
62.835923358237025
62.83592335824448
62.83592335830638
62.835923358932845
62.83592336520294
62.835923427898884
62.83592405485614
62.835930324432475
62.83599302035364

Combined = (1-abs(CC)) + RRSE + RAE:
2-dimensional space:
 - 1. dimension: classifier.ridge, min: -12.0, max: -2.0, step: 1.0
 - 2. dimension: classifier.maxIts, min: 1.0, max: 15.0, step: 1.0
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Accuracy:
2-dimensional space:
 - 1. dimension: classifier.ridge, min: -12.0, max: -2.0, step: 1.0
 - 2. dimension: classifier.maxIts, min: 1.0, max: 15.0, step: 1.0
87.5946722381823
87.5946722381823

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87.5946722381823
87.5946722381823
87.5946722381823
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87.5946722381823
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87.5946722381823
87.5946722381823
87.5946722381823
87.58238213018296
87.58238213018296
87.58238213018296
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87.58238213018296
87.58238213018296
87.58238213018296
87.57470081268339
87.57470081268339
87.57470081268339
87.57470081268339
87.57470081268339
87.57470081268339
87.57470081268339
87.57470081268339
87.57470081268339
87.57470081268339
87.57316454918347
87.57316454918347
87.57316454918347
87.57316454918347
87.57316454918347
87.57316454918347
87.57316454918347
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87.57316454918347
87.57316454918347
87.57316454918347
87.57316454918347
87.57316454918347
87.56855575868373
87.56855575868373
87.56855575868373
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87.56855575868373
87.56855575868373
87.56855575868373
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87.56855575868373
87.55933817768424
87.55933817768424
87.55933817768424
87.55933817768424
87.55933817768424
87.55933817768424
87.55933817768424
87.55933817768424
87.55933817768424
87.55933817768424
87.55319312368458
87.55319312368458
87.55319312368458
87.55319312368458
87.55319312368458
87.55319312368458
87.55319312368458
87.55319312368458
87.55319312368458
87.55319312368458
87.53322169818567
87.53322169818567
87.53322169818567
87.53322169818567
87.53322169818567
87.53322169818567
87.53322169818567
87.53322169818567
87.53322169818567
87.53322169818567
87.5255403806861
87.5255403806861
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87.5255403806861
87.5255403806861
87.5255403806861
87.5255403806861
87.41646567219209
87.41646567219209
87.41646567219209
87.41646567219209

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87.41646567219209
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87.37498655769437
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87.37498655769437
87.37498655769437
87.37498655769437
87.37498655769437
87.37498655769437
87.37498655769437
87.35962392269522
87.35962392269522
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87.35962392269522
86.8127141167253
86.8127141167253
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86.8127141167253
86.8127141167253
84.29785076736361
84.29785076736361
84.29785076736361
84.29785076736361
84.29785076736361
84.29785076736361
84.29785076736361
84.29785076736361
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84.29785076736361
84.29785076736361

Kappa:
2-dimensional space:
```

```
 - 1. dimension: classifier.ridge, min: -12.0, max: -2.0, step: 1.0
 - 2. dimension: classifier.maxIts, min: 1.0, max: 15.0, step: 1.0
0.5902637667246742
0.5902637667246742
0.5902637667246742
0.5902637667246742
0.5902637667246742
0.5902637667246742
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0.5902637667246742
0.5902637667246742
0.5902637667246742
0.5902637667246742
0.5897846692272822
0.5897846692272822
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0.5897846692272822
0.5891277832672634
0.5891277832672634
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0.5891277832672634
0.5889424123617222
0.5889424123617222
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0.5889424123617222
0.5899678152350752
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0.5899678152350752
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0.5899678152350752
0.589706084463093
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0.5884973115696431
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0.5886614213422746
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0.588967240178347
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0.5893841410487031
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0.5853146517136765
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0.5850921976594151
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0.5810681802197672
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0.5735760505043654
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0.5457092963745914
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```

```
Best performance:
Performance (-2, 1): 84.29785076736361 (ACC)


Result of Step 1: -12, 15


=== Initial space - End ===


Center is on border of space.


Final result:-12, 15
Classifier: weka.classifiers.functions.Logistic -R 1.0E-12 -M 15
Shutting down thread pool...
Shutting down thread pool...
Starting thread pool with 1 slots...


weka.classifiers.meta.MultiSearch
=================================
Options: -E ACC -search "weka.core.setupgenerator.MathParameter -property classifier.ridge
-min -12.0 -max -2.0 -step 1.0 -base 10.0 -expression pow(BASE,I)" -search
"weka.core.setupgenerator.MathParameter -property classifier.maxIts -min 1.0 -max 15.0 -step
1.0 -base 10.0 -expression I" -sample-size 100.0 -log-file C:\Users\Su\Desktop\log.txt
-initial-folds 10 -subsequent-folds 10 -num-slots 1 -S 1 -W
weka.classifiers.functions.Logistic -- -R 1.0E-8 -M -1


Step 1:



=== Initial space - Start ===
Determining best values with 10-fold CV in space:
2-dimensional space:
 - 1. dimension: classifier.ridge, min: -12.0, max: -2.0, step: 1.0
 - 2. dimension: classifier.maxIts, min: 1.0, max: 15.0, step: 1.0


Performance (-12, 1): 84.2763430783648 (ACC): cached=false
Performance (-11, 1): 84.2763430783648 (ACC): cached=false
Performance (-10, 1): 84.2763430783648 (ACC): cached=false
Performance (-9, 1): 84.2763430783648 (ACC): cached=false
Performance (-8, 1): 84.2763430783648 (ACC): cached=false
Performance (-7, 1): 84.2763430783648 (ACC): cached=false
Performance (-6, 1): 84.2763430783648 (ACC): cached=false
Performance (-5, 1): 84.2763430783648 (ACC): cached=false
Performance (-4, 1): 84.2763430783648 (ACC): cached=false
Performance (-3, 1): 84.2763430783648 (ACC): cached=false
Performance (-2, 1): 84.2763430783648 (ACC): cached=false
Performance (-12, 2): 87.01857342571398 (ACC): cached=false
Performance (-11, 2): 87.01857342571398 (ACC): cached=false
Performance (-10, 2): 87.01857342571398 (ACC): cached=false
Performance (-9, 2): 87.01857342571398 (ACC): cached=false
Performance (-8, 2): 87.01857342571398 (ACC): cached=false
Performance (-7, 2): 87.01857342571398 (ACC): cached=false
Performance (-6, 2): 87.01857342571398 (ACC): cached=false
Performance (-5, 2): 87.01857342571398 (ACC): cached=false
Performance (-4, 2): 87.01857342571398 (ACC): cached=false
Performance (-3, 2): 87.01857342571398 (ACC): cached=false
```

```
Performance (-2, 2): 87.01857342571398 (ACC): cached=false
Performance (-12, 3): 87.35962392269522 (ACC): cached=false
Performance (-11, 3): 87.35962392269522 (ACC): cached=false
Performance (-10, 3): 87.35962392269522 (ACC): cached=false
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Performance (-10, 6): 87.50864148218703 (ACC): cached=false
Performance (-9, 6): 87.50864148218703 (ACC): cached=false
Performance (-8, 6): 87.50864148218703 (ACC): cached=false
Performance (-7, 6): 87.50864148218703 (ACC): cached=false
Performance (-6, 6): 87.50864148218703 (ACC): cached=false
Performance (-5, 6): 87.50864148218703 (ACC): cached=false
Performance (-4, 6): 87.50864148218703 (ACC): cached=false
Performance (-3, 6): 87.50864148218703 (ACC): cached=false
Performance (-2, 6): 87.50864148218703 (ACC): cached=false
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Performance (-7, 8): 87.57930960318313 (ACC): cached=false
Performance (-6, 8): 87.57930960318313 (ACC): cached=false
Performance (-5, 8): 87.57930960318313 (ACC): cached=false
Performance (-4, 8): 87.57930960318313 (ACC): cached=false
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Performance (-7, 10): 87.57162828568356 (ACC): cached=false
Performance (-6, 10): 87.57162828568356 (ACC): cached=false
Performance (-5, 10): 87.57162828568356 (ACC): cached=false
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Performance (-2, 10): 87.57162828568356 (ACC): cached=false
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Performance (-9, 11): 87.59620850168221 (ACC): cached=false
Performance (-8, 11): 87.59620850168221 (ACC): cached=false
Performance (-7, 11): 87.59620850168221 (ACC): cached=false
Performance (-6, 11): 87.59620850168221 (ACC): cached=false
Performance (-5, 11): 87.59620850168221 (ACC): cached=false
Performance (-4, 11): 87.59620850168221 (ACC): cached=false
Performance (-3, 11): 87.59620850168221 (ACC): cached=false
Performance (-2, 11): 87.59620850168221 (ACC): cached=false
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Performance (-10, 12): 87.57930960318313 (ACC): cached=false
Performance (-9, 12): 87.57930960318313 (ACC): cached=false
Performance (-8, 12): 87.57930960318313 (ACC): cached=false
Performance (-7, 12): 87.57930960318313 (ACC): cached=false
Performance (-6, 12): 87.57930960318313 (ACC): cached=false
Performance (-5, 12): 87.57930960318313 (ACC): cached=false
Performance (-4, 12): 87.57930960318313 (ACC): cached=false
Performance (-3, 12): 87.57930960318313 (ACC): cached=false
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Performance (-12, 13): 87.59620850168221 (ACC): cached=false
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Performance (-11, 13): 87.59620850168221 (ACC): cached=false
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Performance (-9, 13): 87.59620850168221 (ACC): cached=false
Performance (-8, 13): 87.59620850168221 (ACC): cached=false
Performance (-7, 13): 87.59620850168221 (ACC): cached=false
Performance (-6, 13): 87.59620850168221 (ACC): cached=false
Performance (-5, 13): 87.59620850168221 (ACC): cached=false
Performance (-4, 13): 87.59620850168221 (ACC): cached=false
Performance (-3, 13): 87.59620850168221 (ACC): cached=false
Performance (-2, 13): 87.59620850168221 (ACC): cached=false
Performance (-12, 14): 87.61310740018128 (ACC): cached=false
Performance (-11, 14): 87.61310740018128 (ACC): cached=false
Performance (-10, 14): 87.61310740018128 (ACC): cached=false
Performance (-9, 14): 87.61310740018128 (ACC): cached=false
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Performance (-7, 14): 87.61310740018128 (ACC): cached=false
Performance (-6, 14): 87.61310740018128 (ACC): cached=false
Performance (-5, 14): 87.61310740018128 (ACC): cached=false
Performance (-4, 14): 87.61310740018128 (ACC): cached=false
Performance (-3, 14): 87.61310740018128 (ACC): cached=false
Performance (-2, 14): 87.61310740018128 (ACC): cached=false
Performance (-12, 15): 87.59928102868204 (ACC): cached=false
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Performance (-10, 15): 87.59928102868204 (ACC): cached=false
Performance (-9, 15): 87.59928102868204 (ACC): cached=false
Performance (-8, 15): 87.59928102868204 (ACC): cached=false
Performance (-7, 15): 87.59928102868204 (ACC): cached=false
Performance (-6, 15): 87.59928102868204 (ACC): cached=false
Performance (-5, 15): 87.59928102868204 (ACC): cached=false
Performance (-4, 15): 87.59928102868204 (ACC): cached=false
Performance (-3, 15): 87.59928102868204 (ACC): cached=false
Performance (-2, 15): 87.59928102868204 (ACC): cached=false


Correlation coefficient:
2-dimensional space:
 - 1. dimension: classifier.ridge, min: -12.0, max: -2.0, step: 1.0
 - 2. dimension: classifier.maxIts, min: 1.0, max: 15.0, step: 1.0
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Root mean squared error:
2-dimensional space:
 - 1. dimension: classifier.ridge, min: -12.0, max: -2.0, step: 1.0
 - 2. dimension: classifier.maxIts, min: 1.0, max: 15.0, step: 1.0
0.3154952125303691
0.3154952125303685
0.31549521253036295
0.3154952125303074
0.3154952125297632
0.31549521252432594
0.31549521246996015
0.3154952119263025
0.31549520648971313
0.3154951521247528
0.3154946085679298
0.315324564892096
0.31532456489209554
0.31532456489209204
0.3153245648920603

```
0.31532456489173816
0.3153245648885183
0.31532456485633537
0.31532456453449065
0.315324561316028
0.315324529131544
0.31532420730041255
0.3155349077570838
0.3155349077570834
0.3155349077570765
0.315534907757021
0.31553490775645254
0.3155349077507672
0.31553490769392634
0.31553490712551563
0.31553490144142216
0.3155348446015089
0.31553427630561826
0.3151689504908367
0.31516895049083604
0.3151689504908322
0.3151689504907914
0.31516895049038174
0.3151689504862862
0.3151689504453343
0.31516895003581796
0.31516894594067424
0.31516890498985956
0.3151684955450524
0.31546779710948825
0.3154677971094874
0.315467797109482
0.3154677971094312
0.31546779710891865
0.3154677971037919
0.3154677970525097
0.3154677965396991
0.31546779141157966
0.31546774013125584
0.3154672274131474
0.3153056568397378
0.31530565683973755
0.3153056568397305
0.31530565683970174
0.31530565683938827
0.31530565683626005
0.3153056568049617
0.31530565649198994
0.31530565336225963
0.3153056220650752
0.31530530910546556
0.3152763163637698
0.3152763163637694
0.3152763163637647
0.3152763163637203
0.3152763163632656
```

```
0.31527631635873105
0.3152763163133749
0.31527631585981075
0.31527631132417794
0.31527626596858094
0.31527581248477277
0.3151929501066509
0.3151929501066504
0.3151929501066467
0.31519295010660653
0.315192950106206
0.31519295010220744
0.3151929500622345
0.31519294966249517
0.31519294566512435
0.3151929056920783
0.3151925060308499
0.3152750258631788
0.31527502586317824
0.31527502586317413
0.3152750258631411
0.31527502586281797
0.31527502585958
0.3152750258272024
0.31527502550341463
0.31527502226554643
0.3152749898871765
0.31527466613491045
0.31595972443465753
0.31595972443465725
0.3159597244346543
0.3159597244346209
0.31595972443428194
0.3159597244309109
0.3159597243971942
0.3159597240600411
0.3159597206885255
0.31595968697352256
0.31595934984151514
0.3173751593651904
0.3173751593651899
0.3173751593651869
0.31737515936515126
0.3173751593648001
0.31737515936128996
0.3173751593261869
0.3173751589751708
0.317375155465
0.31737512036339244
0.317374769356137
0.3182447524459394
0.31824475244593886
0.3182447524459349
0.31824475244589734
0.3182447524551986
0.3182447524417431
```

0.3182447524039812
0.3182447520263517
0.3182447482500395
0.31824471048707154
0.3182443328680698
0.3200918677967692
0.3200918677967688
0.32009186779676546
0.3200918677967256
0.3200918677963398
0.3200918677924729
0.3200918677924729
0.3200918675378656
0.32009186736694606
0.32009186349854046
0.3200918248145705
0.3200914379843085
0.32435395785733284
0.32435395785733223
0.3243539578573281
0.32435395785728643
0.3243539578568637
0.3243539578526554
0.3243539578105613
0.3243539573896373
0.32435395318038596
0.3243539110879799
0.32435349017418574
0.3469972631558987
0.34699726315589813
0.346997263155892
0.346997263155836
0.3469972631552726
0.34699726314965096
0.34699726309343565
0.3469972625312909
0.34699725690982486
0.3469972006952269
0.34699663855705143

Root relative squared error:
2-dimensional space:
 - 1. dimension: classifier.ridge, min: -12.0, max: -2.0, step: 1.0
 - 2. dimension: classifier.maxIts, min: 1.0, max: 15.0, step: 1.0
77.86001176548943
77.86001176548928
77.86001176548791
77.8600117654742
77.86001176533989
77.86001176399806
77.86001175058131
77.86001161641384
77.86001027473608
77.85999685818875
77.85986271561241

77.817898203711
77.81789820371088
77.81789820371002
77.81789820370219
77.81789820362268
77.81789820282806
77.81789819488574
77.81789811545876
77.8178973211851
77.81788937848359
77.81780995485151
77.86980801816235
77.86980801816225
77.86980801816053
77.86980801814683
77.86980801800655
77.86980801660349
77.86980800257592
77.86980786229974
77.86980645954125
77.86979243220854
77.86965218436016
77.7794946443804
77.77949464438024
77.7794946443793
77.77949464436922
77.77949464426813
77.7794946432574
77.77949463315102
77.77949453208785
77.77949352146098
77.77948341534594
77.7793823698269
77.85324600516229
77.85324600516209
77.85324600516074
77.85324600514821
77.85324600502172
77.85324600375651
77.85324599110075
77.85324586454593
77.85324459899442
77.85323194369427
77.85310541170148
77.81323194850141
77.81323194850134
77.81323194850047
77.8132319484925
77.81323194841515
77.81323194764315
77.81323193991912
77.81323186268187
77.81323109030616
77.81322336657834
77.81314613231956
77.80599111024668

77.80599111024658
77.80599111024542
77.80599111023446
77.80599111012224
77.80599110900317
77.80599109780988
77.8059909858763
77.8059898665426
77.80597867338602
77.80586675962873
77.78541742956206
77.78541742956195
77.78541742956104
77.78541742955112
77.78541742945228
77.78541742846548
77.7854174186007
77.78541731995035
77.78541633345253
77.78540646863776
77.78530783757552
77.80567263190784
77.8056726319077
77.80567263190669
77.80567263189853
77.8056726318188
77.8056726310197
77.80567262302934
77.80567254312284
77.80567174406013
77.80566375351016
77.80558385576768
77.97464710985183
77.97464710985176
77.97464710985103
77.97464710984278
77.97464710975913
77.97464710892721
77.97464710060638
77.97464701740148
77.97464618535639
77.9746378649432
77.97455466525895
78.32395757786396
78.32395757786384
78.32395757786311
78.32395757785432
78.32395757776764
78.32395757690139
78.32395756823843
78.32395748161234
78.32395661534898
78.32394795274027
78.3238613288298
78.53856155538641
78.53856155538628

```
78.53856155538531
78.53856155537603
78.53856155528288
78.53856155435082
78.53856154503168
78.53856145183777
78.53856051989426
78.53855120049728
78.53845800916268
78.99440499527373
78.99440499527364
78.99440499527282
78.99440499526297
78.99440499516776
78.99440499421345
78.99440498466619
78.99440488919912
78.9944039345282
78.9943943878402
78.99429892328938
80.04623199321627
80.04623199321611
80.04623199321512
80.04623199320481
80.0462319931005
80.04623199206193
80.04623198167367
80.04623187779524
80.04623083900813
80.04622045116356
80.04611657525146
85.63429782412393
85.63429782412379
85.63429782412229
85.63429782410847
85.63429782396942
85.63429782258207
85.6342978087089
85.63429766997905
85.63429628267617
85.63428240966296
85.63414368145656
```

Mean absolute error:
2-dimensional space:
 - 1. dimension: classifier.ridge, min: -12.0, max: -2.0, step: 1.0
 - 2. dimension: classifier.maxIts, min: 1.0, max: 15.0, step: 1.0
```
0.15506363653732225
0.15506363653732294
0.15506363653732733
0.15506363653736624
0.1550636365377824
0.15506363654193586
0.15506363658347155
```

```
0.15506363699881207
0.15506364115221988
0.15506368268624135
0.155064098023066
0.15477024214601784
0.15477024214601845
0.15477024214602306
0.15477024214607435
0.15477024214658527
0.15477024215169233
0.1547702422027659
0.15477024271352252
0.15477024782106807
0.15477029889635135
0.1547708096305005
0.15507211058461762
0.15507211058461848
0.15507211058462184
0.15507211058466341
0.15507211058506915
0.15507211058915532
0.15507211063001022
0.15507211103855215
0.15507211512395513
0.15507215597802898
0.155072564523616
0.15480071595761416
0.1548007159576151
0.15480071595761977
0.15480071595767586
0.15480071595822475
0.15480071596372094
0.15480071601867798
0.15480071656821423
0.15480072206360115
0.15480077701720782
0.15480132652601863
0.15503144016290105
0.15503144016290157
0.15503144016290557
0.1550314401629531
0.1550314401634136
0.15503144016803375
0.1550314402142419
0.15503144067629104
0.15503144529680693
0.15503149150177706
0.15503195353728902
0.1539039877037976
0.1539039877037983
0.15390398770380234
0.15390398770384345
0.1539039877042319
0.15390398770814587
0.1539039877472758
0.1539039881385817
```

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0.15390399205163624
0.15390403118230955
0.15390442250403966
0.1547699933340721
0.15476999333407293
0.15476999333407804
0.15476999333413247
0.15476999333465877
0.15476999333992716
0.15476999339262185
0.15476999391957474
0.15476999918908943
0.15477005188396645
0.15477057880493064
0.15487593991791948
0.15487593991792026
0.15487593991792584
0.1548759399179821
0.15487593991856416
0.1548759399243905
0.15487593998263727
0.15487594056508294
0.15487594638956764
0.15487600463382445
0.15487658702044452
0.15523492829162022
0.15523492829162114
0.15523492829162563
0.15523492829167776
0.1552349282921721
0.15523492829715188
0.1552349283469262
0.15523492884465878
0.15523493382200973
0.15523498359514157
0.15523548129208783
0.15526329944691517
0.15526329944691558
0.15526329944691833
0.15526329944694894
0.15526329944726905
0.1552632994504657
0.15526329948243556
0.15526329980215112
0.15526330299929503
0.15526333497074465
0.15526365468728817
0.15419142431164493
0.1541914243116458
0.1541914243116517
0.1541914243117095
0.15419142431229274
0.15419142431810917
0.15419142437630332
0.15419142495822424
0.15419143077742126
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0.15419148896938042
0.1541920708874795
0.15620052965837816
0.15620052965837875
0.15620052965838277
0.15620052965842698
0.15620052965886422
0.15620052966325199
0.1562005297071451
0.1562005301460732
0.15620053453535834
0.15620057842819907
0.15620101735694095
0.15536293582672714
0.15536293582672764
0.15536293582673252
0.155362935826789
0.1553629358273517
0.15536293583297342
0.15536293588918074
0.15536293645127403
0.15536294207220605
0.15536299828150812
0.15536356037249158
0.16261242028999662
0.16261242028999723
0.16261242029000306
0.16261242029006104
0.1626124202906485
0.16261242029652578
0.162612420355952
0.16261242094297418
0.1626124268197777
0.1626124855878079
0.16261307326693575
0.2063553922882889
0.2063553922882892
0.20635539228829097
0.2063553922883104
0.20635539228851743
0.20635539229056898
0.20635539231110003
0.20635539251640256
0.20635539456942942
0.20635541509972108
0.20635562040314542
```

```
Root absolute error:
2-dimensional space:
  - 1. dimension: classifier.ridge, min: -12.0, max: -2.0, step: 1.0
  - 2. dimension: classifier.maxIts, min: 1.0, max: 15.0, step: 1.0
47.21887169406937
47.218871694069584
47.21887169407092
```

47.21887169408277
47.2188716942095
47.218871695474284
47.21887170812243
47.21887183459896
47.21887309936506
47.21888574700879
47.2190122224138
47.12952932839212
47.12952932839231
47.12952932839371
47.129529328409326
47.129529328564914
47.12952933012008
47.12952934567263
47.129529501204594
47.129531056517905
47.12954660959858
47.1297021347155856
47.22145215046073
47.221452150461
47.221452150462014
47.221452150474676
47.221452150598225
47.22145215184252
47.22145216428336
47.22145228868963
47.22145353274739
47.22146597333832
47.22159038072413
47.13880899596556
47.13880899596585
47.138808995967274
47.138808995984355
47.1388089961515
47.13880899782516
47.13880901456029
47.13880918190114
47.13881085531713
47.13882758939716
47.13899492189762
47.209067483960816
47.20906748396098
47.209067483962194
47.20906748397667
47.2090674841169
47.20906748552379
47.20906749959477
47.20906764029468
47.20906904730119
47.209083117308865
47.209223813064774
46.86574370930682
46.86574370930703
46.86574370930826
46.86574370932078

46.86574370943907
46.86574371063092
46.86574372254649
46.86574384170417
46.86574503327961
46.86575694907292
46.86587611157276
47.12945356195452
47.12945356195477
47.129453561956325
47.1294535619729
47.129453562133165
47.129453563737464
47.129453579783664
47.129453740247605
47.1294553448826
47.12947139115039
47.12963184536104
47.161715659379986
47.16171565938022
47.161715659381926
47.16171565939906
47.1617156595763
47.1617156613505
47.161715679087386
47.16171585644958
47.16171763008009
47.161735366205406
47.161912710421646
47.27103223634133
47.27103223634161
47.271032236342975
47.27103223635885
47.27103223650938
47.27103223802579
47.27103225318271
47.27103240474868
47.271033920416066
47.271049076974876
47.271200632096196
47.27967161802746
47.27967161802758
47.279671618028416
47.27967161803774
47.27967161813522
47.27967161910864
47.27967162884387
47.27967172620137
47.27967269977282
47.27968243549043
47.279779793290004
46.953271853294694
46.953271853294964
46.953271853296755
46.953271853314355
46.953271853491955

46.95327185526314
46.95271872984004
46.953272050186406
46.95327382220675
46.95329154240675
46.95346874395233
47.565070271710034
47.56507027171021
47.565070271711434
47.5650702717249
47.56507027185805
47.56507027319418
47.56507028656019
47.565070420219456
47.565071756813225
47.56508512274776
47.56521878219499
47.310012177164744
47.31001217716489
47.31001217716638
47.31001217718358
47.31001217735493
47.31001217906681
47.31001219618266
47.3100123673473
47.3100140789934
47.31003119544882
47.31020235938268
49.517573436292565
49.51757343629276
49.51757343629453
49.51757343631219
49.517573436491084
49.517573438280785
49.51757345617683
49.517573635132635
49.51757542469489
49.51759332031593
49.51777227616887
62.83787101494176
62.837871014941854
62.837871014942394
62.83787101494831
62.83787101501136
62.83787101563608
62.83787102188804
62.83787108440531
62.837871709578394
62.83787796131625
62.837940478849504

Combined = (1-abs(CC)) + RRSE + RAE:
2-dimensional space:
 - 1. dimension: classifier.ridge, min: -12.0, max: -2.0, step: 1.0

 - 2. dimension: classifier.maxIts, min: 1.0, max: 15.0, step: 1.0
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Accuracy:
2-dimensional space:
 - 1. dimension: classifier.ridge, min: -12.0, max: -2.0, step: 1.0
 - 2. dimension: classifier.maxIts, min: 1.0, max: 15.0, step: 1.0
87.61310740018128
87.61310740018128
87.61310740018128
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87.61310740018128
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87.61310740018128
87.61310740018128
87.61003487318145
87.61003487318145
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87.61003487318145
87.61003487318145
87.61003487318145
87.61003487318145
87.61003487318145
87.61003487318145
87.61003487318145
87.59928102868204
87.59928102868204
87.59928102868204
87.59928102868204
87.59928102868204
87.59928102868204
87.59928102868204
87.59928102868204
87.59928102868204
87.59928102868204
87.59928102868204
87.59620850168221
87.59620850168221
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87.57162828568356
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87.55319312368458
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87.55319312368458
87.55319312368458
87.55319312368458
87.55319312368458
87.55319312368458
87.50864148218703
87.50864148218703
87.50864148218703
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87.41339314519226
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87.41339314519226
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87.35962392269522
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87.35962392269522
87.35962392269522
87.35962392269522
87.35962392269522
87.35962392269522
87.35962392269522
87.35962392269522
87.35962392269522
87.01857342571398
87.01857342571398
87.01857342571398
87.01857342571398
87.01857342571398
87.01857342571398
87.01857342571398
87.01857342571398
87.01857342571398
87.01857342571398
84.2763430783648
84.2763430783648
84.2763430783648
84.2763430783648
84.2763430783648
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84.2763430783648
84.2763430783648
84.2763430783648

84.2763430783648
84.2763430783648

Kappa:
2-dimensional space:
 - 1. dimension: classifier.ridge, min: -12.0, max: -2.0, step: 1.0
 - 2. dimension: classifier.maxIts, min: 1.0, max: 15.0, step: 1.0
0.5892364188050068
0.5892364188050068
0.5892364188050068
0.5892364188050068
0.5892364188050068
0.5892364188050068
0.5892364188050068
0.5892364188050068
0.5892364188050068
0.5892364188050068
0.5892364188050068
0.5891345302818282
0.5891345302818282
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0.5891345302818282
0.5891345302818282
0.5886428698720609
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0.5886428698720609
0.5886428698720609
0.5886428698720609
0.5874076702565875
0.5874076702565875
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0.5882459108749348
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0.5872819804537248
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0.5875819353298183
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0.5868818984971288
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0.5835830752773443
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0.5789077300982053
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0.5752134734443152
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0.545276492407696
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```

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0.545276492407696
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Best performance:
Performance (-2, 1): 84.2763430783648 (ACC)

Result of Step 1: -12, 14

=== Initial space - End ===

Center is on border of space.

Final result:-12, 14
Classifier: weka.classifiers.functions.Logistic -R 1.0E-12 -M 14
Shutting down thread pool...
Shutting down thread pool...
Starting thread pool with 1 slots...

weka.classifiers.meta.MultiSearch
=================================
Options: -E ACC -search "weka.core.setupgenerator.MathParameter -property classifier.ridge
-min -12.0 -max -2.0 -step 1.0 -base 10.0 -expression pow(BASE,I)" -search
"weka.core.setupgenerator.MathParameter -property classifier.maxIts -min 1.0 -max 15.0 -step
1.0 -base 10.0 -expression I" -sample-size 100.0 -log-file C:\Users\Su\Desktop\log.txt
-initial-folds 10 -subsequent-folds 10 -num-slots 1 -S 1 -W
weka.classifiers.functions.Logistic -- -R 1.0E-8 -M -1

Step 1:


=== Initial space - Start ===
Determining best values with 10-fold CV in space:
2-dimensional space:
 - 1. dimension: classifier.ridge, min: -12.0, max: -2.0, step: 1.0
 - 2. dimension: classifier.maxIts, min: 1.0, max: 15.0, step: 1.0

Performance (-12, 1): 84.25790791636581 (ACC): cached=false
Performance (-11, 1): 84.25790791636581 (ACC): cached=false
Performance (-10, 1): 84.25790791636581 (ACC): cached=false
Performance (-9, 1): 84.25790791636581 (ACC): cached=false
Performance (-8, 1): 84.25790791636581 (ACC): cached=false
Performance (-7, 1): 84.25790791636581 (ACC): cached=false
Performance (-6, 1): 84.25790791636581 (ACC): cached=false
Performance (-5, 1): 84.25790791636581 (ACC): cached=false
Performance (-4, 1): 84.25790791636581 (ACC): cached=false
Performance (-3, 1): 84.25790791636581 (ACC): cached=false
Performance (-2, 1): 84.25790791636581 (ACC): cached=false
Performance (-12, 2): 86.91564377121964 (ACC): cached=false
Performance (-11, 2): 86.91564377121964 (ACC): cached=false
Performance (-10, 2): 86.91564377121964 (ACC): cached=false
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Performance (-9, 2): 86.91564377121964 (ACC): cached=false
Performance (-8, 2): 86.91564377121964 (ACC): cached=false
Performance (-7, 2): 86.91564377121964 (ACC): cached=false
Performance (-6, 2): 86.91564377121964 (ACC): cached=false
Performance (-5, 2): 86.91564377121964 (ACC): cached=false
Performance (-4, 2): 86.91564377121964 (ACC): cached=false
Performance (-3, 2): 86.91564377121964 (ACC): cached=false
Performance (-2, 2): 86.91564377121964 (ACC): cached=false
Performance (-12, 3): 87.36116018619514 (ACC): cached=false
Performance (-11, 3): 87.36116018619514 (ACC): cached=false
Performance (-10, 3): 87.36116018619514 (ACC): cached=false
Performance (-9, 3): 87.36116018619514 (ACC): cached=false
Performance (-8, 3): 87.36116018619514 (ACC): cached=false
Performance (-7, 3): 87.36116018619514 (ACC): cached=false
Performance (-6, 3): 87.36116018619514 (ACC): cached=false
Performance (-5, 3): 87.36116018619514 (ACC): cached=false
Performance (-4, 3): 87.36116018619514 (ACC): cached=false
Performance (-3, 3): 87.36116018619514 (ACC): cached=false
Performance (-2, 3): 87.36116018619514 (ACC): cached=false
Performance (-12, 4): 87.4256832531916 (ACC): cached=false
Performance (-11, 4): 87.4256832531916 (ACC): cached=false
Performance (-10, 4): 87.4256832531916 (ACC): cached=false
Performance (-9, 4): 87.4256832531916 (ACC): cached=false
Performance (-8, 4): 87.4256832531916 (ACC): cached=false
Performance (-7, 4): 87.4256832531916 (ACC): cached=false
Performance (-6, 4): 87.4256832531916 (ACC): cached=false
Performance (-5, 4): 87.4256832531916 (ACC): cached=false
Performance (-4, 4): 87.4256832531916 (ACC): cached=false
Performance (-3, 4): 87.4256832531916 (ACC): cached=false
Performance (-2, 4): 87.4256832531916 (ACC): cached=false
Performance (-12, 5): 87.43336457069117 (ACC): cached=false
Performance (-11, 5): 87.43336457069117 (ACC): cached=false
Performance (-10, 5): 87.43336457069117 (ACC): cached=false
Performance (-9, 5): 87.43336457069117 (ACC): cached=false
Performance (-8, 5): 87.43336457069117 (ACC): cached=false
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Performance (-3, 6): 87.52246785368627 (ACC): cached=false
Performance (-2, 6): 87.52246785368627 (ACC): cached=false
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Performance (-2, 7): 87.63768761617993 (ACC): cached=false
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Performance (-10, 8): 87.58699092068271 (ACC): cached=false
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Performance (-8, 8): 87.58699092068271 (ACC): cached=false
Performance (-7, 8): 87.58699092068271 (ACC): cached=false
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Performance (-4, 8): 87.58699092068271 (ACC): cached=false
Performance (-3, 8): 87.58699092068271 (ACC): cached=false
Performance (-2, 8): 87.58699092068271 (ACC): cached=false
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Performance (-10, 9): 87.61003487318145 (ACC): cached=false
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Performance (-7, 9): 87.61003487318145 (ACC): cached=false
Performance (-6, 9): 87.61003487318145 (ACC): cached=false
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Performance (-4, 9): 87.61003487318145 (ACC): cached=false
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Performance (-9, 10): 87.60235355568187 (ACC): cached=false
Performance (-8, 10): 87.60235355568187 (ACC): cached=false
Performance (-7, 10): 87.60235355568187 (ACC): cached=false
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Performance (-5, 10): 87.60235355568187 (ACC): cached=false
Performance (-4, 10): 87.60235355568187 (ACC): cached=false
Performance (-3, 10): 87.60235355568187 (ACC): cached=false
Performance (-2, 10): 87.60235355568187 (ACC): cached=false
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Performance (-8, 11): 87.62386124468068 (ACC): cached=false
Performance (-7, 11): 87.62386124468068 (ACC): cached=false
Performance (-6, 11): 87.62386124468068 (ACC): cached=false
Performance (-5, 11): 87.62386124468068 (ACC): cached=false
Performance (-4, 11): 87.62386124468068 (ACC): cached=false
Performance (-3, 11): 87.62386124468068 (ACC): cached=false
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Performance (-10, 12): 87.62232498118077 (ACC): cached=false
Performance (-9, 12): 87.62232498118077 (ACC): cached=false
Performance (-8, 12): 87.62232498118077 (ACC): cached=false
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Performance (-7, 12): 87.62232498118077 (ACC): cached=false
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Performance (-4, 12): 87.62232498118077 (ACC): cached=false
Performance (-3, 12): 87.62232498118077 (ACC): cached=false
Performance (-2, 12): 87.62232498118077 (ACC): cached=false
Performance (-12, 13): 87.60849860968153 (ACC): cached=false
Performance (-11, 13): 87.60849860968153 (ACC): cached=false
Performance (-10, 13): 87.60849860968153 (ACC): cached=false
Performance (-9, 13): 87.60849860968153 (ACC): cached=false
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Performance (-6, 13): 87.60849860968153 (ACC): cached=false
Performance (-5, 13): 87.60849860968153 (ACC): cached=false
Performance (-4, 13): 87.60849860968153 (ACC): cached=false
Performance (-3, 13): 87.60849860968153 (ACC): cached=false
Performance (-2, 13): 87.60849860968153 (ACC): cached=false
Performance (-12, 14): 87.60849860968153 (ACC): cached=false
Performance (-11, 14): 87.60849860968153 (ACC): cached=false
Performance (-10, 14): 87.60849860968153 (ACC): cached=false
Performance (-9, 14): 87.60849860968153 (ACC): cached=false
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Performance (-6, 14): 87.60849860968153 (ACC): cached=false
Performance (-5, 14): 87.60849860968153 (ACC): cached=false
Performance (-4, 14): 87.60849860968153 (ACC): cached=false
Performance (-3, 14): 87.60849860968153 (ACC): cached=false
Performance (-2, 14): 87.60849860968153 (ACC): cached=false
Performance (-12, 15): 87.5946722381823 (ACC): cached=false
Performance (-11, 15): 87.5946722381823 (ACC): cached=false
Performance (-10, 15): 87.5946722381823 (ACC): cached=false
Performance (-9, 15): 87.5946722381823 (ACC): cached=false
Performance (-8, 15): 87.5946722381823 (ACC): cached=false
Performance (-7, 15): 87.5946722381823 (ACC): cached=false
Performance (-6, 15): 87.5946722381823 (ACC): cached=false
Performance (-5, 15): 87.5946722381823 (ACC): cached=false
Performance (-4, 15): 87.5946722381823 (ACC): cached=false
Performance (-3, 15): 87.5946722381823 (ACC): cached=false
Performance (-2, 15): 87.5946722381823 (ACC): cached=false


Correlation coefficient:
2-dimensional space:
 - 1. dimension: classifier.ridge, min: -12.0, max: -2.0, step: 1.0
 - 2. dimension: classifier.maxIts, min: 1.0, max: 15.0, step: 1.0
NaN
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Root mean squared error:
2-dimensional space:
 - 1. dimension: classifier.ridge, min: -12.0, max: -2.0, step: 1.0
 - 2. dimension: classifier.maxIts, min: 1.0, max: 15.0, step: 1.0
0.31498628111603943
0.31498628111603916
0.3149862811160353
0.31498628111600374
0.3149862811156728
0.31498628111236204
0.31498628107925136
0.3149862807481523

0.3149862774371645
0.31498624432740313
0.31498591324018776
0.31478143295015537
0.31478143295015476
0.31478143295015115
0.31478143295011335
0.31478143294972927
0.3147814329458836
0.3147814329074379
0.3147814325229778
0.3147814286783766
0.3147813902326258
0.31478100580072327
0.3148774860628109
0.3148774860628103
0.3148774860628061
0.3148774860627639
0.31487748606233956
0.3148774860580995
0.31487748601569726
0.31487748559165507
0.3148774813512287
0.314877438947325
0.31487701494044795
0.31495542828560663
0.3149554282856063
0.3149554282856022
0.31495542828556733
0.3149554282852193
0.3149554282817409
0.3149554282469603
0.3149554278991518
0.31495542442108576
0.31495538964063113
0.3149550418587573
0.3150977514597444
0.3150977514597435
0.315097751459738
0.3150977514596907
0.31509775145920704
0.31509775145437674
0.31509775140607604
0.31509775092308057
0.31509774609311597
0.31509769779393865
0.315097214849032
0.3151155546001424
0.3151155546001418
0.31511555460013685
0.31511555460008595
0.31511555459957197
0.3151155545944278
0.3151155545429909
0.315115554028615
0.31511554888485765

0.31511549744784506
0.3151149831314545
0.31480172653916183
0.31480172653916144
0.3148017265391586
0.31480172653912186
0.3148017265387607
0.31480172653514493
0.31480172649897475
0.3148017261372681
0.3148017225202149
0.3148016863498454
0.31480132466258337
0.3151670228811161
0.3151670228811159
0.3151670228811105
0.3151670228810567
0.31516702288051474
0.31516702287510306
0.31516702282096903
0.3151670222796444
0.3151670168663926
0.31516696273454714
0.31516642148384766
0.3148591065319791
0.31485910653197846
0.3148591065319751
0.3148591065319443
0.3148591065316276
0.31485910652847277
0.3148591064969073
0.3148591061812578
0.3148591030247633
0.31485907145997943
0.3148587558277539
0.3156429719913591
0.31564297199135866
0.3156429719913546
0.31564297199131897
0.3156429719909549
0.3156429719873199
0.3156429719509799
0.31564297158757343
0.31564296795350044
0.31564293161295615
0.31564256822528075
0.3172065404150043
0.317206540415004
0.3172065404150002
0.31720654041496504
0.3172065404146092
0.31720654041107343
0.31720654037569146
0.3172065400218912
0.317206536483891
0.3172065011039895

```
0.317206147313487
0.3180119939037488
0.31801199390374857
0.3180119939037449
0.3180119939037072
0.3180119939033264
0.31801199389950835
0.3180119938613341
0.3180119934795824
0.31801198966208916
0.3180119514872398
0.31801156974959827
0.3199592346814389
0.31995923468143866
0.3199592346814345
0.31995923468139326
0.3199592346809986
0.31995923467703286
0.31995923463738396
0.3199592342409056
0.3199592302761077
0.3199591906282473
0.3199587941595104
0.32484533524057235
0.32484533524057185
0.3248453352405678
0.3248453352405241
0.3248453352400866
0.3248453352400866
0.3248453523572307
0.32484533519208364
0.324845347556753
0.32484533039158614
0.3248452867508118
0.3248448503541172
0.347345112944084
0.34734511294408354
0.3473451129440781
0.3473451129440212
0.34734511294345344
0.34734511293776993
0.347345112880956
0.3473451123128048
0.3473451066312915
0.34734504981622877
0.34734448167341647
```

```
Root relative squared error:
2-dimensional space:
 - 1. dimension: classifier.ridge, min: -12.0, max: -2.0, step: 1.0
 - 2. dimension: classifier.maxIts, min: 1.0, max: 15.0, step: 1.0
77.73441427830662
77.73441427830656
77.73441427830561
77.73441427829782
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77.73441427821614
77.73441427739908
77.73441426922781
77.73441418751699
77.73441337040934
77.7344051993617
77.73432349145153
77.68386048232998
77.68386048232982
77.68386048232894
77.6838604823196
77.68386048222482
77.68386048127577
77.68386047178787
77.68386037690824
77.68385942811193
77.68384994021326
77.68375506754556
77.70756510979956
77.7075651097994
77.70756510979837
77.70756510978796
77.70756510968324
77.70756510863686
77.70756509817254
77.70756499352458
77.7075639470439
77.70755348232585
77.70744884308215
77.72680021113511
77.72680021113503
77.726800211134
77.72680021112541
77.72680021103952
77.7268002101811
77.72680020159771
77.72680011576321
77.72679925742288
77.72679067407043
77.72670484614115
77.761923672832
77.7619236728318
77.76192367283043
77.76192367281877
77.7619236726994
77.76192367150735
77.76192365958738
77.76192354039054
77.76192234841967
77.76191042882671
77.76179124446315
77.76631725050228
77.76631725050213
77.76631725050092
77.76631725048834
77.76631725036151

77.766317249092
77.76631723639805
77.76631710945695
77.76631584004622
77.76630314607735
77.76617622006715
77.68886866951017
77.68886866951007
77.68886866950938
77.6888686695003
77.68886866941118
77.68886866851885
77.68886865959253
77.68886857032814
77.68886767768765
77.68885875132274
77.68876949172906
77.77901893598911
77.77901893598907
77.77901893598772
77.77901893597445
77.7790189358407
77.77901893450517
77.77901892114562
77.77901878755391
77.77901745163554
77.77900409261785
77.77887051916204
77.70302928665559
77.70302928665542
77.7030292866546
77.703029286647
77.70302928656884
77.70302928579027
77.70302927800033
77.70302920010224
77.70302842112149
77.7030206313537
77.70294273752896
77.89647683028196
77.89647683028183
77.89647683028083
77.89647683027204
77.8964768301822
77.89647682928512
77.89647682031689
77.89647673063303
77.89647583379227
77.89646686543048
77.89637718619747
78.28234466924137
78.28234466924131
78.28234466924036
78.28234466923169
78.28234466914388
78.28234466827129

78.2823446595395
78.28234457222631
78.28234369909504
78.28233496780709
78.28224765702836
78.48111985066875
78.48111985066869
78.4811198506678
78.48111985065849
78.48111985056451
78.48111984962226
78.48111984020137
78.48111974599014
78.4811188038837
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78.4810151750799
78.9616729108727
78.96167291087264
78.96167291087161
78.96167291086142
78.96167291076405
78.96167290978534
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78.96167280215495
78.9616718236957
78.96166203913239
78.96156419593449
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80.16749737955546
80.16749737955445
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80.16749737943569
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80.16749725988946
80.16749618289043
80.16748541292921
80.16737771604373
85.7201425137424
85.7201425137423
85.72014251374095
85.7201425137269
85.7201425135868
85.72014251218417
85.72014249816326
85.72014235795112
85.7201409558294
85.72012693462946
85.71998672455877

Mean absolute error:
2-dimensional space:
 - 1. dimension: classifier.ridge, min: -12.0, max: -2.0, step: 1.0
 - 2. dimension: classifier.maxIts, min: 1.0, max: 15.0, step: 1.0

```
0.15423401036981743
0.15423401036981774
0.15423401036982307
0.15423401036987502
0.15423401037039836
0.1542340103756307
0.15423401042798243
0.15423401095148098
0.15423401618646584
0.15423406853612598
0.15423459201435763
0.15434033719964058
0.15434033719964127
0.15434033719964643
0.1543403371996976
0.15434033720021575
0.15434033720539725
0.1543403372572063
0.15434033777532435
0.15434034295649993
0.15434039476844078
0.15434091290807908
0.1542803589987401
0.15428035899874087
0.1542803589987445
0.15428035899879508
0.15428035899929737
0.15428035900431042
0.1542803590544624
0.15428035955598327
0.15428036457119224
0.15428041472339382
0.15428091625971038
0.1547947238930867
0.15479472389308735
0.1547947238930917
0.15479472389313978
0.15479472389359858
0.15479472389819218
0.1547947239441258
0.1547947244034759
0.1547947289969723
0.15479477493186092
0.15479523427232944
0.15458857148987257
0.1545885714898734
0.15458857148987762
0.15458857148992047
0.15458857149034802
0.154588571494629
0.15458857153741434
0.15458857196529024
0.15458857624403144
0.15458861903174748
0.1545890469395872
0.15464371902467658
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0.15464371902467716
0.1546437190246808
0.15464371902472132
0.15464371902509877
0.15464371902889695
0.1546437190668769
0.1546437194466728
0.15464372324463443
0.1546437612246839
0.15464414106865892
0.15434940465567526
0.154349404655676
0.1543494046556814
0.15434940465573893
0.1543494046563081
0.1543494046620046
0.1543494047189824
0.15434940528877525
0.1543494109866531
0.15434946796524898
0.1543500377296341
0.15462549186962954
0.15462549186962996
0.15462549186963326
0.15462549186967026
0.15462549187004498
0.15462549187377594
0.15462549191109923
0.15462549228431072
0.1546254960164333
0.15462553333822054
0.1546259066087862
0.15339372408798946
0.1533937240879897
0.15339372408799287
0.1533937240880306
0.1533937240884118
0.15339372409222715
0.1533937241303821
0.15339372451194452
0.15339372832753795
0.15339376648382066
0.15339414807973256
0.15488693686992555
0.15488693686992588
0.15488693686992885
0.15488693686995889
0.15488693687026683
0.15488693687333108
0.15488693690399616
0.15488693721063587
0.15488694027704075
0.15488697094111437
0.1548872775838404
0.15414905200417997
0.15414905200418041
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0.15414905200418633
0.15414905200424248
0.15414905200481188
0.15414905201051635
0.1541490520675366
0.15414905263776527
0.1541490583400374
0.15414911536274123
0.1541496855883363
0.15607404894656032
0.15607404894656066
0.1560740489465647
0.15607404894660643
0.1560740489470308
0.1560740489512658
0.1560740489936331
0.1560740494172906
0.15607405365387333
0.1560740960196922
0.15607451967844244
0.15534165926593563
0.15534165926593618
0.1553416592659415
0.15534165926599725
0.1553416592665519
0.1553416592720972
0.1553416593275631
0.15534165988219603
0.15534166542852784
0.1553417208918439
0.1553422755230895
0.16377975097701558
0.16377975097701616
0.163779750977021555
0.1637797509770774
0.16377975097764083
0.16377975098327713
0.16377975103962503
0.1637797516031239
0.16377975723809843
0.16377981358783256
0.16378037708471888
0.20609357974880446
0.20609357974880482
0.20609357974880677
0.20609357974882794
0.20609357974902637
0.2060935797510294
0.20609357977105622
0.20609357997130842
0.20609358197385802
0.2060936019993752
0.20609380225511942
```

Root absolute error:
2-dimensional space:
 - 1. dimension: classifier.ridge, min: -12.0, max: -2.0, step: 1.0
 - 2. dimension: classifier.maxIts, min: 1.0, max: 15.0, step: 1.0
46.96623985574218
46.96623985574227
46.96623985574389
46.96623985575972
46.96623985591908
46.96623985751239
46.96623987345417
46.96624003286621
46.96624162698643
46.96625756813124
46.96641697398556
46.99861774295785
46.99861774295806
46.99861774295963
46.99861774297522
46.998617743132996
46.99861774471083
46.998617760487356
46.99861791826096
46.99861949599556
46.99863527339794
46.99879305358191
46.98035360936725
46.98035360936749
46.9803536093686
46.98035360938399
46.98035360953695
46.980353611063485
46.980353626335415
46.980353779054965
46.98035530625094
46.98037057824102
46.98052330249998
47.13698433525794
47.136984335258134
47.13698433525946
47.1369843352741
47.13698433541381
47.136984336812624
47.1369843508
47.13698449067801
47.136985889456746
47.13699987722113
47.13713975230165
47.07420827702683
47.07420827702708
47.07420827702837
47.07420827704142
47.074208277171614
47.074208278475226
47.074208291503915
47.07420842179763

47.07420972472936
47.07422275413921
47.074353057579984
47.091001410660894
47.09100141066107
47.09100141066218
47.09100141067452
47.09100141078946
47.09100141194605
47.091001423511436
47.09100153916417
47.09100269569234
47.09101426110589
47.091129928481685
47.001378899942516
47.00137889994275
47.001378899944385
47.00137889996191
47.00137890013522
47.001378901869884
47.00137891922036
47.00137909272961
47.0013808278067
47.00139817852198
47.00157167910534
47.085451007518465
47.085451007518586
47.085451007519595
47.085451007530864
47.08545100764497
47.08545100878109
47.085451020146515
47.085451133794216
47.08545227027354
47.08546363523777
47.08557730092588
46.7103618754887
46.71036187548878
46.71036187548974
46.71036187550123
46.71036187561731
46.71036187677913
46.71036188839781
46.71036200458847
46.71036316648575
46.71037478556458
46.71049098642769
47.165064372712976
47.165064372713076
47.165064372713985
47.16506437272313
47.16506437281691
47.16506437375
47.165064383087916
47.16506447646365
47.16506541022338

47.165074747828186
47.16516812448218
46.94036894070396
46.9403689407041
46.940368940705895
46.94036894072299
46.940368940896384
46.94036894263347
46.94036895999687
46.94036913363883
46.94037087005404
46.94038823420075
46.940561875228475
47.52655526822423
47.52655526822433
47.526555268225565
47.52655526823827
47.526555268367495
47.52655526965711
47.5265552825585
47.52655541156766
47.52655670166158
47.526569602598315
47.5266986121367
47.30353319076146
47.303533190761634
47.303533190763254
47.30353319078023
47.30353319094913
47.303533192637744
47.3035320952783
47.30353337842069
47.303535067350055
47.30355195664314
47.30372084899088
49.87304064425426
49.87304064425444
49.87304064425608
49.87304064427308
49.87304064444466
49.87304064616099
49.87304066331964
49.8730408349123
49.87304255083452
49.873059710053305
49.87323130210267
62.75814572934868
62.7581457293488
62.75814572934939
62.75814572935584
62.758145729416256
62.758145730026214
62.75814573612463
62.75814579710401
62.758146406906114
62.758152504933655

62.75821348538338

Combined = (1-abs(CC)) + RRSE + RAE:
2-dimensional space:
 - 1. dimension: classifier.ridge, min: -12.0, max: -2.0, step: 1.0
 - 2. dimension: classifier.maxIts, min: 1.0, max: 15.0, step: 1.0
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Accuracy:
2-dimensional space:
 - 1. dimension: classifier.ridge, min: -12.0, max: -2.0, step: 1.0
 - 2. dimension: classifier.maxIts, min: 1.0, max: 15.0, step: 1.0
87.63768761617993
87.63768761617993
87.63768761617993
87.63768761617993
87.63768761617993
87.63768761617993
87.63768761617993
87.63768761617993
87.63768761617993
87.63768761617993
87.62386124468068
87.62386124468068
87.62386124468068
87.62386124468068
87.62386124468068
87.62386124468068
87.62386124468068
87.62386124468068
87.62386124468068
87.62386124468068
87.62232498118077
87.62232498118077
87.62232498118077
87.62232498118077
87.62232498118077
87.62232498118077
87.62232498118077
87.62232498118077
87.62232498118077
87.62232498118077
87.61003487318145
87.61003487318145
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87.60849860968153
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87.60849860968153
87.60849860968153
87.60235355568187
87.60235355568187
87.60235355568187
87.60235355568187
87.60235355568187
87.60235355568187
87.60235355568187
87.60235355568187
87.60235355568187
87.60235355568187
87.60235355568187
87.5946722381823
87.5946722381823
87.5946722381823
87.5946722381823
87.5946722381823
87.5946722381823
87.5946722381823
87.5946722381823
87.5946722381823
87.5946722381823
87.5946722381823
87.58699092068271
87.58699092068271
87.58699092068271
87.58699092068271
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87.58699092068271
87.58699092068271
87.58699092068271
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87.58699092068271
87.52246785368627

87.52246785368627
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87.52246785368627
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87.52246785368627
87.43336457069117
87.43336457069117
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87.43336457069117
87.4256832531916
87.4256832531916
87.4256832531916
87.4256832531916
87.4256832531916
87.4256832531916
87.4256832531916
87.4256832531916
87.4256832531916
87.4256832531916
87.4256832531916
87.36116018619514
87.36116018619514
87.36116018619514
87.36116018619514
87.36116018619514
87.36116018619514
87.36116018619514
87.36116018619514
87.36116018619514
87.36116018619514
86.91564377121964
86.91564377121964
86.91564377121964
86.91564377121964
86.91564377121964
86.91564377121964
86.91564377121964
86.91564377121964
86.91564377121964
86.91564377121964
84.25790791636581
84.25790791636581

84.25790791636581
84.25790791636581
84.25790791636581
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84.25790791636581
84.25790791636581
84.25790791636581
84.25790791636581
84.25790791636581

Kappa:
2-dimensional space:
 - 1. dimension: classifier.ridge, min: -12.0, max: -2.0, step: 1.0
 - 2. dimension: classifier.maxIts, min: 1.0, max: 15.0, step: 1.0
0.5903938288490177
0.5903938288490177
0.5903938288490177
0.5903938288490177
0.5903938288490177
0.5903938288490177
0.5903938288490177
0.5903938288490177
0.5903938288490177
0.5903938288490177
0.5890165184839566
0.5890165184839566
0.5890165184839566
0.5890165184839566
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0.5890165184839566
0.5890165184839566
0.5889532173635175
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0.5889532173635175
0.589893410394603
0.589893410394603
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0.589893410394603

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0.589893410394603
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0.589340972306731
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0.589340972306731
0.589708108169137
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0.5875455913597887
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0.5856184134142892
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0.5796772483130322
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0.5740157602873621
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0.5740157602873621
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0.5445536796742432
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0.5445536796742432


Best performance:
Performance (-2, 1): 84.25790791636581 (ACC)

Result of Step 1: -12, 7

=== Initial space - End ===

Center is on border of space.

Final result:-12, 7
Classifier: weka.classifiers.functions.Logistic -R 1.0E-12 -M 7
Shutting down thread pool...
Shutting down thread pool...
Starting thread pool with 1 slots...

weka.classifiers.meta.MultiSearch
=================================
Options: -E ACC -search "weka.core.setupgenerator.MathParameter -property classifier.ridge
-min -12.0 -max -2.0 -step 1.0 -base 10.0 -expression pow(BASE,I)" -search
"weka.core.setupgenerator.MathParameter -property classifier.maxIts -min 1.0 -max 15.0 -step
1.0 -base 10.0 -expression I" -sample-size 100.0 -log-file C:\Users\Su\Desktop\log.txt
-initial-folds 10 -subsequent-folds 10 -num-slots 1 -S 1 -W
weka.classifiers.functions.Logistic -- -R 1.0E-8 -M -1

Step 1:


=== Initial space - Start ===
Determining best values with 10-fold CV in space:
2-dimensional space:
 - 1. dimension: classifier.ridge, min: -12.0, max: -2.0, step: 1.0
 - 2. dimension: classifier.maxIts, min: 1.0, max: 15.0, step: 1.0

Performance (-12, 1): 84.28402439586438 (ACC): cached=false
Performance (-11, 1): 84.28402439586438 (ACC): cached=false
Performance (-10, 1): 84.28402439586438 (ACC): cached=false
Performance (-9, 1): 84.28402439586438 (ACC): cached=false
Performance (-8, 1): 84.28402439586438 (ACC): cached=false
Performance (-7, 1): 84.28402439586438 (ACC): cached=false
Performance (-6, 1): 84.28402439586438 (ACC): cached=false
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```
Performance (-5, 1): 84.28402439586438 (ACC): cached=false
Performance (-4, 1): 84.28402439586438 (ACC): cached=false
Performance (-3, 1): 84.28402439586438 (ACC): cached=false
Performance (-2, 1): 84.28402439586438 (ACC): cached=false
Performance (-12, 2): 87.09077781021001 (ACC): cached=false
Performance (-11, 2): 87.09077781021001 (ACC): cached=false
Performance (-10, 2): 87.09077781021001 (ACC): cached=false
Performance (-9, 2): 87.09077781021001 (ACC): cached=false
Performance (-8, 2): 87.09077781021001 (ACC): cached=false
Performance (-7, 2): 87.09077781021001 (ACC): cached=false
Performance (-6, 2): 87.09077781021001 (ACC): cached=false
Performance (-5, 2): 87.09077781021001 (ACC): cached=false
Performance (-4, 2): 87.09077781021001 (ACC): cached=false
Performance (-3, 2): 87.09077781021001 (ACC): cached=false
Performance (-2, 2): 87.09077781021001 (ACC): cached=false
Performance (-12, 3): 87.3872766656937 (ACC): cached=false
Performance (-11, 3): 87.3872766656937 (ACC): cached=false
Performance (-10, 3): 87.3872766656937 (ACC): cached=false
Performance (-9, 3): 87.3872766656937 (ACC): cached=false
Performance (-8, 3): 87.3872766656937 (ACC): cached=false
Performance (-7, 3): 87.3872766656937 (ACC): cached=false
Performance (-6, 3): 87.3872766656937 (ACC): cached=false
Performance (-5, 3): 87.3872766656937 (ACC): cached=false
Performance (-4, 3): 87.3872766656937 (ACC): cached=false
Performance (-3, 3): 87.3872766656937 (ACC): cached=false
Performance (-2, 3): 87.3872766656937 (ACC): cached=false
Performance (-12, 4): 87.45179973269015 (ACC): cached=false
Performance (-11, 4): 87.45179973269015 (ACC): cached=false
Performance (-10, 4): 87.45179973269015 (ACC): cached=false
Performance (-9, 4): 87.45179973269015 (ACC): cached=false
Performance (-8, 4): 87.45179973269015 (ACC): cached=false
Performance (-7, 4): 87.45179973269015 (ACC): cached=false
Performance (-6, 4): 87.45179973269015 (ACC): cached=false
Performance (-5, 4): 87.45179973269015 (ACC): cached=false
Performance (-4, 4): 87.45179973269015 (ACC): cached=false
Performance (-3, 4): 87.45179973269015 (ACC): cached=false
Performance (-2, 4): 87.45179973269015 (ACC): cached=false
Performance (-12, 5): 87.46869863118923 (ACC): cached=false
Performance (-11, 5): 87.46869863118923 (ACC): cached=false
Performance (-10, 5): 87.46869863118923 (ACC): cached=false
Performance (-9, 5): 87.46869863118923 (ACC): cached=false
Performance (-8, 5): 87.46869863118923 (ACC): cached=false
Performance (-7, 5): 87.46869863118923 (ACC): cached=false
Performance (-6, 5): 87.46869863118923 (ACC): cached=false
Performance (-5, 5): 87.46869863118923 (ACC): cached=false
Performance (-4, 5): 87.46869863118923 (ACC): cached=false
Performance (-3, 5): 87.46869863118923 (ACC): cached=false
Performance (-2, 5): 87.46869863118923 (ACC): cached=false
Performance (-12, 6): 87.54243927918516 (ACC): cached=false
Performance (-11, 6): 87.54243927918516 (ACC): cached=false
Performance (-10, 6): 87.54243927918516 (ACC): cached=false
Performance (-9, 6): 87.54243927918516 (ACC): cached=false
Performance (-8, 6): 87.54243927918516 (ACC): cached=false
Performance (-7, 6): 87.54243927918516 (ACC): cached=false
Performance (-6, 6): 87.54243927918516 (ACC): cached=false
Performance (-5, 6): 87.54243927918516 (ACC): cached=false
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```
Performance (-4, 6): 87.54243927918516 (ACC): cached=false
Performance (-3, 6): 87.54243927918516 (ACC): cached=false
Performance (-2, 6): 87.54243927918516 (ACC): cached=false
Performance (-12, 7): 87.65919530517874 (ACC): cached=false
Performance (-11, 7): 87.65919530517874 (ACC): cached=false
Performance (-10, 7): 87.65919530517874 (ACC): cached=false
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Performance (-6, 7): 87.65919530517874 (ACC): cached=false
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Performance (-4, 7): 87.65919530517874 (ACC): cached=false
Performance (-3, 7): 87.65919530517874 (ACC): cached=false
Performance (-2, 7): 87.65919530517874 (ACC): cached=false
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Performance (-9, 8): 87.62847003518043 (ACC): cached=false
Performance (-8, 8): 87.62847003518043 (ACC): cached=false
Performance (-7, 8): 87.62847003518043 (ACC): cached=false
Performance (-6, 8): 87.62847003518043 (ACC): cached=false
Performance (-5, 8): 87.62847003518043 (ACC): cached=false
Performance (-4, 8): 87.62847003518043 (ACC): cached=false
Performance (-3, 8): 87.62847003518043 (ACC): cached=false
Performance (-2, 8): 87.62847003518043 (ACC): cached=false
Performance (-12, 9): 87.62078871768085 (ACC): cached=false
Performance (-11, 9): 87.62078871768085 (ACC): cached=false
Performance (-10, 9): 87.62078871768085 (ACC): cached=false
Performance (-9, 9): 87.62078871768085 (ACC): cached=false
Performance (-8, 9): 87.62078871768085 (ACC): cached=false
Performance (-7, 9): 87.62078871768085 (ACC): cached=false
Performance (-6, 9): 87.62078871768085 (ACC): cached=false
Performance (-5, 9): 87.62078871768085 (ACC): cached=false
Performance (-4, 9): 87.62078871768085 (ACC): cached=false
Performance (-3, 9): 87.62078871768085 (ACC): cached=false
Performance (-2, 9): 87.62078871768085 (ACC): cached=false
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Performance (-10, 10): 87.64690519717942 (ACC): cached=false
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Performance (-8, 10): 87.64690519717942 (ACC): cached=false
Performance (-7, 10): 87.64690519717942 (ACC): cached=false
Performance (-6, 10): 87.64690519717942 (ACC): cached=false
Performance (-5, 10): 87.64690519717942 (ACC): cached=false
Performance (-4, 10): 87.64690519717942 (ACC): cached=false
Performance (-3, 10): 87.64690519717942 (ACC): cached=false
Performance (-2, 10): 87.64690519717942 (ACC): cached=false
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Performance (-11, 11): 87.65612277817891 (ACC): cached=false
Performance (-10, 11): 87.65612277817891 (ACC): cached=false
Performance (-9, 11): 87.65612277817891 (ACC): cached=false
Performance (-8, 11): 87.65612277817891 (ACC): cached=false
Performance (-7, 11): 87.65612277817891 (ACC): cached=false
Performance (-6, 11): 87.65612277817891 (ACC): cached=false
Performance (-5, 11): 87.65612277817891 (ACC): cached=false
Performance (-4, 11): 87.65612277817891 (ACC): cached=false
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Performance (-3, 11): 87.65612277817891 (ACC): cached=false
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Performance (-12, 12): 87.65305025117908 (ACC): cached=false
Performance (-11, 12): 87.65305025117908 (ACC): cached=false
Performance (-10, 12): 87.65305025117908 (ACC): cached=false
Performance (-9, 12): 87.65305025117908 (ACC): cached=false
Performance (-8, 12): 87.65305025117908 (ACC): cached=false
Performance (-7, 12): 87.65305025117908 (ACC): cached=false
Performance (-6, 12): 87.65305025117908 (ACC): cached=false
Performance (-5, 12): 87.65305025117908 (ACC): cached=false
Performance (-4, 12): 87.65305025117908 (ACC): cached=false
Performance (-3, 12): 87.65305025117908 (ACC): cached=false
Performance (-2, 12): 87.65305025117908 (ACC): cached=false
Performance (-12, 13): 87.67148541317806 (ACC): cached=false
Performance (-11, 13): 87.67148541317806 (ACC): cached=false
Performance (-10, 13): 87.67148541317806 (ACC): cached=false
Performance (-9, 13): 87.67148541317806 (ACC): cached=false
Performance (-8, 13): 87.67148541317806 (ACC): cached=false
Performance (-7, 13): 87.67148541317806 (ACC): cached=false
Performance (-6, 13): 87.67148541317806 (ACC): cached=false
Performance (-5, 13): 87.67148541317806 (ACC): cached=false
Performance (-4, 13): 87.67148541317806 (ACC): cached=false
Performance (-3, 13): 87.67148541317806 (ACC): cached=false
Performance (-2, 13): 87.67148541317806 (ACC): cached=false
Performance (-12, 14): 87.64076014317976 (ACC): cached=false
Performance (-11, 14): 87.64076014317976 (ACC): cached=false
Performance (-10, 14): 87.64076014317976 (ACC): cached=false
Performance (-9, 14): 87.64076014317976 (ACC): cached=false
Performance (-8, 14): 87.64076014317976 (ACC): cached=false
Performance (-7, 14): 87.64076014317976 (ACC): cached=false
Performance (-6, 14): 87.64076014317976 (ACC): cached=false
Performance (-5, 14): 87.64076014317976 (ACC): cached=false
Performance (-4, 14): 87.64076014317976 (ACC): cached=false
Performance (-3, 14): 87.64076014317976 (ACC): cached=false
Performance (-2, 14): 87.64076014317976 (ACC): cached=false
Performance (-12, 15): 87.65612277817891 (ACC): cached=false
Performance (-11, 15): 87.65612277817891 (ACC): cached=false
Performance (-10, 15): 87.65612277817891 (ACC): cached=false
Performance (-9, 15): 87.65612277817891 (ACC): cached=false
Performance (-8, 15): 87.65612277817891 (ACC): cached=false
Performance (-7, 15): 87.65612277817891 (ACC): cached=false
Performance (-6, 15): 87.65612277817891 (ACC): cached=false
Performance (-5, 15): 87.65612277817891 (ACC): cached=false
Performance (-4, 15): 87.65612277817891 (ACC): cached=false
Performance (-3, 15): 87.65612277817891 (ACC): cached=false
Performance (-2, 15): 87.65765904167883 (ACC): cached=false


Correlation coefficient:
2-dimensional space:
 - 1. dimension: classifier.ridge, min: -12.0, max: -2.0, step: 1.0
 - 2. dimension: classifier.maxIts, min: 1.0, max: 15.0, step: 1.0
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Root mean squared error:
2-dimensional space:
 - 1. dimension: classifier.ridge, min: -12.0, max: -2.0, step: 1.0
 - 2. dimension: classifier.maxIts, min: 1.0, max: 15.0, step: 1.0
0.31442515826332657

```
0.31442515826332634
0.3144251582633206
0.31442515826327117
0.31442515826276607
0.3144251582577088
0.31442515820714806
0.314425157701536
0.31442515264540855
0.31442510208505947
0.3144245965746805
0.31439269278070003
0.3143926927806997
0.3143926927806972
0.3143926927806635
0.3143926927803333
0.3143926927770323
0.3143926927440193
0.3143926924139235
0.31439268911292767
0.3143926561031265
0.31439232601833655
0.3144578532266465
0.31412428494165257
0.3141242849416513
0.31412428494164796
0.3141242849416081
0.3141242849412144
0.3141242849372868
0.3141242489800176
0.3141242845051424
0.31412428057658026
0.31412424129165645
0.3141238485118018
0.31445847108839736
0.3144584710883964
0.3144584710883916
0.31445847108833475
0.3144584710877773
0.3144584710822167
0.3144584710265982
0.31445847047041026
0.3144584649085568
0.3144584092911087
0.3142175263143852
0.31421752631438504
0.31421752631438044
0.314217526314336
0.3142175263138969
0.31421752630949484
0.31421752626548505
0.3142175258253873
0.31421752142439585
0.3142174774152534
0.31421703740046963
0.3140897550753729
0.3140897550753728
```

```
0.31408975507536824
0.3140897550753301
0.31408975507494263
0.3140897550710769
0.31408975503241204
0.3140897546457706
0.31408975077935714
0.3140897121157012
0.3140893255275827
0.3144345139585273
0.3144345139585264
0.31443451395852107
0.31443451395846667
0.3144345139579316
0.3144345139525838
0.31443451389911137
0.31443451336439504
0.3144345080172268
0.3144344545465672
0.3144339199427204
0.3142688786423482
0.31426887864234776
0.3142688786423465
0.3142688786231545
0.3142688786201636
0.3142688786901815
0.3142688786090526
0.3142688783093904
0.3142688753127778
0.3142688453467432
0.3142685456956542
0.3141898890450488
0.3141898890450483
0.31418988904504425
0.31418988904500866
0.31418988904465583
0.3141898890411201
0.3141898890057611
0.3141898886521671
0.31418988511624335
0.3141898497570933
0.31418949617612646
0.3149340004582229
0.3149340004582226
0.3149340004582192
0.3149340004581872
0.3149340004578613
0.3149340004546108
0.3149340004221136
0.31493400009712097
0.3149339968471794
0.314933964347951
0.3149336393730454
0.31645123740784216
0.31645123740784165
0.31645123740784378
```

```
0.31645123740780345
0.31645123740745473
0.3164512374039568
0.3164512373689965
0.3164512370193926
0.3164512335233531
0.3164511985630538
0.31645084896917636
0.31734537824273334
0.3173453782427332
0.3173453782427297
0.31734537824269254
0.3173453782423164
0.31734537823856224
0.3173453782010
3853
0.3173453778257938
0.3173453740733548
0.3173453365490795
0.3173449613172018
0.31926013704194833
0.319260137041948
0.31926013704194356
0.3192601370419045
0.31926013704151673
0.31926013703762907
0.31926013699876266
0.3192601366100854
0.31926013272332743
0.3192600938558539
0.31925970519071406
0.3234362396323818
0.3234362396323815
0.32343623963237744
0.3234362396323349
0.32343623963191104
0.32343623962768997
0.3234362395854464
0.3234362391630166
0.3234362349387248
0.3234361926958973
0.32343577027794224
0.3469055918930879
0.3469055918930873
0.34690559189308195
0.34690559189302383
0.3469055918924596
0.34690559188679765
0.3469055918301828
0.3469055912
6403886
0.3469055856025949
0.34690552898824295
0.34690496285249395
```

Root relative squared error:

```
2-dimensional space:
 - 1. dimension: classifier.ridge, min: -12.0, max: -2.0, step: 1.0
 - 2. dimension: classifier.maxIts, min: 1.0, max: 15.0, step: 1.0
77.59593664005904
77.59593664005898
77.59593664005757
77.59593664004537
77.59593663992072
77.59593663867265
77.59593662619494
77.59593650141662
77.59593525363178
77.59592277601178
77.59579802279053
77.58792459182858
77.5879245918285
77.58792459182787
77.58792459181956
77.58792459173807
77.58792459092342
77.58792458277627
77.58792450131301
77.58792368667126
77.58791554029247
77.58783407976753
77.60400532106483
77.52168511599446
77.52168511599415
77.52168511599332
77.52168511598349
77.52168511588633
77.52168511491705
77.52168510522202
77.5216850826957
77.52168403875281
77.52167434375743
77.52157741092647
77.60415780110662
77.6041578011064
77.6041578011052
77.60415780109118
77.6041578009536
77.60415779958132
77.6041577858554
77.60415764859565
77.60415627600437
77.60414255035975
77.5446958435417
77.54469584354166
77.54469584354051
77.54469584352955
77.54469584342118
77.54469584233482
77.54469583147379
77.54469572286352
77.54469463675753
```

77.54468377588796
77.54457518610631
77.51316360540406
77.51316360540403
77.51316360540291
77.5131636053935
77.51316360529788
77.51316360434387
77.5131635948019
77.51316349938395
77.51316254520466
77.5131530035299
77.51305759873685
77.59824550088948
77.59824550088926
77.59824550088794
77.59824550087451
77.59824550074246
77.59824549942272
77.59824548622642
77.59824535426557
77.59824403465574
77.59823083880991
77.59809890570871
77.55736891337156
77.55736891337145
77.55736891337068
77.55736891336348
77.55736891328966
77.55736891254973
77.55736890515465
77.557368831202
77.55736809167797
77.5573606964602
77.55728674656686
77.53787533397376
77.53787533397364
77.53787533397264
77.53787533396387
77.53787533387678
77.53787533300422
77.53787532427809
77.53787523701581
77.53787436439697
77.5378656382302
77.53777837916209
77.72151210906111
77.72151210906104
77.72151210906019
77.7215121090523
77.72151210897187
77.72151210816968
77.72151210014981
77.72151201994596
77.7215112179037
77.72150319752748

77.72142299805385
78.09594595799634
78.09594595799622
78.09594595799528
78.0959459579868
78.09594595790074
78.0959459570375
78.09594594840976
78.09594586213218
78.09594499935623
78.09593637162052
78.09585009651292
78.31660799393114
78.3166079939311
78.31660799393025
78.31660799392108
78.31660799382826
78.31660799290177
78.31660798364142
78.31660789103603
78.3166069649841
78.3165977044933
78.31650510226909
78.78914493494923
78.78914493494916
78.78914493494807
78.78914493493842
78.78914493484272
78.78914493388329
78.78914492429159
78.78914482837122
78.78914386917118
78.78913427719696
78.78903835982275
79.8197513717862
79.81975137178613
79.81975137178512
79.81975137177461
79.81975137167002
79.8197513706283
79.81975136020316
79.81975125595312
79.81975021345423
79.81973978848765
79.8196355413687
85.61167457877018
85.61167457877004
85.61167457876873
85.61167457875437
85.61167457861514
85.61167457721784
85.61167456324604
85.61167442352927
85.61167302636039
85.61165905469319
85.61151933993898

```
Mean absolute error:
2-dimensional space:
 - 1. dimension: classifier.ridge, min: -12.0, max: -2.0, step: 1.0
 - 2. dimension: classifier.maxIts, min: 1.0, max: 15.0, step: 1.0
0.15387139216779172
0.153871392167792
0.1538713921677951
0.15387139216782836
0.15387139216816217
0.15387139217151727
0.153871392205084
0.15387139254074192
0.15387139589733403
0.15387142946289128
0.1538717650841812
0.15386830463795162
0.1538683046379521
0.15386830463795723
0.15386830463801138
0.15386830463852552
0.15386830464369614
0.15386830469541393
0.15386830521258094
0.15386831038426751
0.15386836210088964
0.1538688792439407
0.15386188265941206
0.15362691505509712
0.15362691505509718
0.153626915055102
0.1536269150551429
0.1536269150555691
0.15362691505983644
0.15362691510250498
0.15362691552920557
0.15362691979620313
0.1536269624656206
0.15362738910413068
0.15386156086762273
0.15386156086762282
0.1538615608676261
0.15386156086765523
0.1538615608679432
0.15386156087084074
0.15386156089979908
0.15386156118943148
0.15386156408570864
0.15386159304833674
0.1535775872827181
0.1535775872827184
0.15357758728272186
0.15357758728276208
0.15357758728316986
```

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0.15357758728725157
0.15357758732810986
0.15357758773667005
0.15357759182225222
0.1535776326775617
0.15357804117949117
0.15371860105445287
0.15371860105445345
0.1537186010544578
0.15371860105450555
0.15371860105496138
0.1537186010595156
0.15371860110505736
0.15371860156048256
0.1537186061472496
0.15371865165651558
0.15371910700801864
0.15385150894066799
0.1538515089406679
0.15385150894067043
0.15385150894069893
0.15385150894099522
0.15385150894394567
0.15385150897347682
0.15385150926878088
0.15385151222181834
0.15385154175197263
0.15385183703169666
0.15279999041725828
0.15279999041725856
0.15279999041726272
0.15279999041730272
0.15279999041771286
0.15279999042180578
0.15279999046273224
0.15279999087202312
0.15279999496491378
0.1528000358939987
0.15280044520364966
0.15404168913825753
0.15404168913825733
0.15404168913826108
0.15404168913829674
0.15404168913866403
0.1540416891423454
0.15404168917917535
0.15404168954746342
0.1540416932303531
0.15404173005918104
0.15404209834099272
0.1541536968998497
0.1541536968998497
0.15415369689985306
0.15415369689988645
0.15415369690021624
0.15415369690352143
```

```
0.1541536969365756
0.15415369726711942
0.15415370057254116
0.15415373362677187
0.15415406416981015
0.15326040619423367
0.15326040619423417
0.15326040619423972
0.15326040619429795
0.153260406194879
0.15326040620069936
0.1532604062588835
0.15326040684074196
0.15326041265931573
0.15326047084506372
0.15326105270209378
0.15524600837542296
0.15524600837542363
0.15524600837542765
0.15524600837547314
0.15524600837591424
0.155246008803329
0.15524600842450945
0.15524600886628204
0.15524601328400173
0.15524605746119982
0.1552464992337236
0.15442721436987877
0.15442721436987936
0.15442721436988469
0.15442721436993956
0.1544272143705036
0.15442721437615825
0.1544272144326768
0.15442721499784534
0.15442722064956602
0.15442727716673527
0.15442784233656345
0.1614330343111359
0.16143303431113626
0.16143303431114212
0.1614330343112035
0.16143303431179254
0.161433034317705
0.1614330343768214
0.16143303496801095
0.16143304087988183
0.1614330999985841
0.161433691184599
0.20582573921768324
0.20582573921768338
0.20582573921768546
0.20582573921770594
0.20582573921791633
0.2058257392199587
0.20582573924043283
```

0.20582573944510882
0.2058257414919301
0.20582576196013527
0.20582596664273115

Root absolute error:
2-dimensional space:
 - 1. dimension: classifier.ridge, min: -12.0, max: -2.0, step: 1.0
 - 2. dimension: classifier.maxIts, min: 1.0, max: 15.0, step: 1.0
46.85581794936187
46.855817949361956
46.8558179493629
46.85581794937303
46.85581794947468
46.855817950496345
46.85581796071785
46.85581806293
46.85581908505547
46.85582930619936
46.855931507198775
46.85487775681494
46.85487775681509
46.854877756816656
46.85487775683314
46.85487775698971
46.85487775856422
46.85487777431296
46.85487793179696
46.85487950664204
46.85489525501864
46.855052731728975
46.852922181752646
46.7813715241764
46.781371524176414
46.781371524177885
46.781371524190334
46.78137152432012
46.78137152561958
46.781371538612696
46.781371668548516
46.781372967904154
46.781385961290574
46.781515878204154
46.85282419201403
46.852824192014054
46.85282419202394
46.85282419211162
46.852824192993964
46.8528242018121
46.85282429000894
46.852825171962586
46.85283399145535
46.76635058305227

46.766350583052365
46.76635058305342
46.766350583065666
46.76635058318984
46.76635058443278
46.76635059687465
46.766350721286486
46.766351965398805
46.766364406366
46.76648880045752
46.809291090210046
46.80929109021022
46.80929109021155
46.80929109022609
46.809291090364894
46.80929109175172
46.809291105619764
46.8092912443026
46.80929263112798
46.80930649918896
46.8094451595782
46.84976325097232
46.849763250972295
46.84976325097306
46.849763250981745
46.84976325107197
46.849763251970415
46.84976326096303
46.84976335088692
46.84976425012481
46.84977324243659
46.84986315891033
46.52956233636995
46.529562336370034
46.529562336371306
46.52956233638348
46.52956233650838
46.52956233775472
46.529562350217354
46.529562474851694
46.52956372118954
46.52957618462232
46.52970082467541
46.90767556716241
46.90767556716234
46.90767556716349
46.90767556717435
46.90767556728619
46.907675568407214
46.907675579622406
46.90767569177085
46.907676813258135
46.90768802810992
46.90780017465828
46.94178337116769
46.94178337116769

46.94178337116870A
46.94178337117887
46.9417833712793
46.94178337228578
46.94178338235119
46.941783483006034
46.94178448954947
46.94179455498785
46.94189520959432
46.66976486214841
46.66976486214857
46.66976486215026
46.66976486216799
46.66976486234492
46.6697648641173
46.66976488183513
46.66976505901851
46.66976683084905
46.66978454915768
46.669961732106955
47.274406264367016
47.274406264367215
47.274406264368444
47.27440626438229
47.274406264516614
47.274406265862154
47.274406279314476
47.27440641383991
47.274407759092384
47.274421211617394
47.274555737032784
47.02507295866733
47.025072958667515
47.025072958669135
47.02507295868585
47.025072958857606
47.025072960579514
47.02507297779014
47.02507314989123
47.02507487091287
47.025092081117805
47.025264182599486
49.158435236923665
49.15843523692377
49.158435236925556
49.15843523694425
49.15843523712362
49.15843523892419
49.15843525692575
49.15843543695056
49.158437237191286
49.158455239596485
49.15863526334162
62.67658484274963
62.67658484274966
62.676584842750295

62.67658484275654
62.676584842820596
62.67658484344253
62.676584849675784
62.676584912003634
62.67658553528703
62.67659176811877
62.676654096601766

Combined = (1-abs(CC)) + RRSE + RAE:
2-dimensional space:
 - 1. dimension: classifier.ridge, min: -12.0, max: -2.0, step: 1.0
 - 2. dimension: classifier.maxIts, min: 1.0, max: 15.0, step: 1.0
NaN
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Accuracy:
2-dimensional space:
 - 1. dimension: classifier.ridge, min: -12.0, max: -2.0, step: 1.0
 - 2. dimension: classifier.maxIts, min: 1.0, max: 15.0, step: 1.0
87.67148541317806
87.67148541317806
87.67148541317806
87.67148541317806
87.67148541317806
87.67148541317806
87.67148541317806
87.67148541317806
87.67148541317806
87.67148541317806
87.67148541317806
87.65919530517874
87.65919530517874
87.65919530517874
87.65919530517874
87.65919530517874
87.65919530517874
87.65919530517874
87.65919530517874
87.65919530517874
87.65919530517874
87.65919530517874
87.65765904167883
87.65612277817891
87.65612277817891
87.65612277817891
87.65612277817891
87.65612277817891
87.65612277817891
87.65612277817891
87.65612277817891
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87.65612277817891
87.65305025117908
87.65305025117908
87.65305025117908
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87.65305025117908
87.65305025117908
87.64690519717942
87.64690519717942
87.64690519717942
87.64690519717942
87.64690519717942
87.64690519717942
87.64690519717942
87.64690519717942
87.64690519717942
87.64690519717942
87.64076014317976
87.64076014317976
87.64076014317976
87.64076014317976
87.64076014317976
87.64076014317976
87.64076014317976
87.64076014317976
87.64076014317976
87.64076014317976
87.62847003518043
87.62847003518043
87.62847003518043
87.62847003518043
87.62847003518043
87.62847003518043
87.62847003518043
87.62847003518043
87.62847003518043
87.62847003518043
87.62078871768085
87.62078871768085
87.62078871768085
87.62078871768085
87.62078871768085

87.62078871768085
87.62078871768085
87.62078871768085
87.62078871768085
87.62078871768085
87.62078871768085
87.54243927918516
87.54243927918516
87.54243927918516
87.54243927918516
87.54243927918516
87.54243927918516
87.54243927918516
87.54243927918516
87.54243927918516
87.54243927918516
87.46869863118923
87.46869863118923
87.46869863118923
87.46869863118923
87.46869863118923
87.46869863118923
87.46869863118923
87.46869863118923
87.46869863118923
87.46869863118923
87.45179973269015
87.45179973269015
87.45179973269015
87.45179973269015
87.45179973269015
87.45179973269015
87.45179973269015
87.45179973269015
87.45179973269015
87.45179973269015
87.3872766656937
87.3872766656937
87.3872766656937
87.3872766656937
87.3872766656937
87.3872766656937
87.3872766656937
87.3872766656937
87.3872766656937
87.3872766656937
87.09077781021001
87.09077781021001
87.09077781021001
87.09077781021001
87.09077781021001
87.09077781021001

87.09077781021001
87.09077781021001
87.09077781021001
87.09077781021001
87.09077781021001
84.28402439586438
84.28402439586438
84.28402439586438
84.28402439586438
84.28402439586438
84.28402439586438
84.28402439586438
84.28402439586438
84.28402439586438
84.28402439586438

Kappa:
2-dimensional space:
 - 1. dimension: classifier.ridge, min: -12.0, max: -2.0, step: 1.0
 - 2. dimension: classifier.maxIts, min: 1.0, max: 15.0, step: 1.0
0.591416191806031
0.591416191806031
0.591416191806031
0.591416191806031
0.591416191806031
0.591416191806031
0.591416191806031
0.591416191806031
0.591416191806031
0.591416191806031
0.591416191806031
0.5909356711771424
0.5909356711771424
0.5909356711771424
0.5909356711771424
0.5909356711771424
0.5909356711771424
0.5909356711771424
0.5909356711771424
0.5909356711771424
0.5909356711771424
0.5911165177945122
0.5896831559653156
0.5896831559653156
0.5896831559653156
0.5896831559653156
0.5896831559653156
0.5896831559653156
0.5896831559653156
0.5896831559653156
0.5896831559653156
0.5896831559653156

```
0.5896831559653156
0.591053430288766
0.591053430288766
0.591053430288766
0.591053430288766
0.591053430288766
0.591053430288766
0.591053430288766
0.591053430288766
0.591053430288766
0.591053430288766
0.5896792292203542
0.5896792292203542
0.5896792292203542
0.5896792292203542
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0.5896792292203542
0.5896792292203542
0.5896792292203542
0.5896792292203542
0.5896792292203542
0.5898920709717541
0.5898920709717541
0.5898920709717541
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0.5898920709717541
0.5898920709717541
0.5898920709717541
0.5908128937000836
0.5908128937000836
0.5908128937000836
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0.5908128937000836
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0.5908128937000836
0.5908128937000836
0.5890098791244065
0.5890098791244065
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0.5890098791244065
0.5890098791244065
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0.5890098791244065
0.5890098791244065
0.5899928584946748
```

```
0.5899928584946748
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0.5881222690851041
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0.5857581808925755
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0.5857581808925755
0.5864422731925911
0.5864422731925911
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0.5798541277255395
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0.5776383867549016
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0.5776383867549016
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0.5458414446570843
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0.5458414446570843
0.5458414446570843
```

```
Best performance:
Performance (-2, 1): 84.28402439586438 (ACC)

Result of Step 1: -12, 13

=== Initial space - End ===

Center is on border of space.

Final result:-12, 13
Classifier: weka.classifiers.functions.Logistic -R 1.0E-12 -M 13
Shutting down thread pool...
Shutting down thread pool...
Starting thread pool with 1 slots...

weka.classifiers.meta.MultiSearch
=================================
Options: -E ACC -search "weka.core.setupgenerator.MathParameter -property classifier.ridge
-min -12.0 -max -2.0 -step 1.0 -base 10.0 -expression pow(BASE,I)" -search
"weka.core.setupgenerator.MathParameter -property classifier.maxIts -min 1.0 -max 15.0 -step
1.0 -base 10.0 -expression I" -sample-size 100.0 -log-file C:\Users\Su\Desktop\log.txt
-initial-folds 10 -subsequent-folds 10 -num-slots 1 -S 1 -W
weka.classifiers.functions.Logistic -- -R 1.0E-8 -M -1

Step 1:


=== Initial space - Start ===
Determining best values with 10-fold CV in space:
2-dimensional space:
 - 1. dimension: classifier.ridge, min: -12.0, max: -2.0, step: 1.0
 - 2. dimension: classifier.maxIts, min: 1.0, max: 15.0, step: 1.0
```

```
Performance (-12, 1): 84.24408154486657 (ACC): cached=false
Performance (-11, 1): 84.24408154486657 (ACC): cached=false
Performance (-10, 1): 84.24408154486657 (ACC): cached=false
Performance (-9, 1): 84.24408154486657 (ACC): cached=false
Performance (-8, 1): 84.24408154486657 (ACC): cached=false
Performance (-7, 1): 84.24408154486657 (ACC): cached=false
Performance (-6, 1): 84.24408154486657 (ACC): cached=false
Performance (-5, 1): 84.24408154486657 (ACC): cached=false
Performance (-4, 1): 84.24408154486657 (ACC): cached=false
Performance (-3, 1): 84.24408154486657 (ACC): cached=false
Performance (-2, 1): 84.24408154486657 (ACC): cached=false
Performance (-12, 2): 86.9125712442198 (ACC): cached=false
Performance (-11, 2): 86.9125712442198 (ACC): cached=false
Performance (-10, 2): 86.9125712442198 (ACC): cached=false
Performance (-9, 2): 86.9125712442198 (ACC): cached=false
Performance (-8, 2): 86.9125712442198 (ACC): cached=false
Performance (-7, 2): 86.9125712442198 (ACC): cached=false
Performance (-6, 2): 86.9125712442198 (ACC): cached=false
Performance (-5, 2): 86.9125712442198 (ACC): cached=false
Performance (-4, 2): 86.9125712442198 (ACC): cached=false
Performance (-3, 2): 86.9125712442198 (ACC): cached=false
Performance (-2, 2): 86.9125712442198 (ACC): cached=false
Performance (-12, 3): 87.35962392269522 (ACC): cached=false
Performance (-11, 3): 87.35962392269522 (ACC): cached=false
Performance (-10, 3): 87.35962392269522 (ACC): cached=false
Performance (-9, 3): 87.35962392269522 (ACC): cached=false
Performance (-8, 3): 87.35962392269522 (ACC): cached=false
Performance (-7, 3): 87.35962392269522 (ACC): cached=false
Performance (-6, 3): 87.35962392269522 (ACC): cached=false
Performance (-5, 3): 87.35962392269522 (ACC): cached=false
Performance (-4, 3): 87.35962392269522 (ACC): cached=false
Performance (-3, 3): 87.35962392269522 (ACC): cached=false
Performance (-2, 3): 87.35962392269522 (ACC): cached=false
Performance (-12, 4): 87.40417556419277 (ACC): cached=false
Performance (-11, 4): 87.40417556419277 (ACC): cached=false
Performance (-10, 4): 87.40417556419277 (ACC): cached=false
Performance (-9, 4): 87.40417556419277 (ACC): cached=false
Performance (-8, 4): 87.40417556419277 (ACC): cached=false
Performance (-7, 4): 87.40417556419277 (ACC): cached=false
Performance (-6, 4): 87.40417556419277 (ACC): cached=false
Performance (-5, 4): 87.40417556419277 (ACC): cached=false
Performance (-4, 4): 87.40417556419277 (ACC): cached=false
Performance (-3, 4): 87.40417556419277 (ACC): cached=false
Performance (-2, 4): 87.40417556419277 (ACC): cached=false
Performance (-12, 5): 87.44565467869049 (ACC): cached=false
Performance (-11, 5): 87.44565467869049 (ACC): cached=false
Performance (-10, 5): 87.44565467869049 (ACC): cached=false
Performance (-9, 5): 87.44565467869049 (ACC): cached=false
Performance (-8, 5): 87.44565467869049 (ACC): cached=false
Performance (-7, 5): 87.44565467869049 (ACC): cached=false
Performance (-6, 5): 87.44565467869049 (ACC): cached=false
Performance (-5, 5): 87.44565467869049 (ACC): cached=false
Performance (-4, 5): 87.44565467869049 (ACC): cached=false
Performance (-3, 5): 87.44565467869049 (ACC): cached=false
Performance (-2, 5): 87.44565467869049 (ACC): cached=false
Performance (-12, 6): 87.53783048868542 (ACC): cached=false
```

```
Performance (-11, 6): 87.53783048868542 (ACC): cached=false
Performance (-10, 6): 87.53783048868542 (ACC): cached=false
Performance (-9, 6): 87.53783048868542 (ACC): cached=false
Performance (-8, 6): 87.53783048868542 (ACC): cached=false
Performance (-7, 6): 87.53783048868542 (ACC): cached=false
Performance (-6, 6): 87.53783048868542 (ACC): cached=false
Performance (-5, 6): 87.53783048868542 (ACC): cached=false
Performance (-4, 6): 87.53783048868542 (ACC): cached=false
Performance (-3, 6): 87.53783048868542 (ACC): cached=false
Performance (-2, 6): 87.53783048868542 (ACC): cached=false
Performance (-12, 7): 87.59159971118247 (ACC): cached=false
Performance (-11, 7): 87.59159971118247 (ACC): cached=false
Performance (-10, 7): 87.59159971118247 (ACC): cached=false
Performance (-9, 7): 87.59159971118247 (ACC): cached=false
Performance (-8, 7): 87.59159971118247 (ACC): cached=false
Performance (-7, 7): 87.59159971118247 (ACC): cached=false
Performance (-6, 7): 87.59159971118247 (ACC): cached=false
Performance (-5, 7): 87.59159971118247 (ACC): cached=false
Performance (-4, 7): 87.59159971118247 (ACC): cached=false
Performance (-3, 7): 87.59159971118247 (ACC): cached=false
Performance (-2, 7): 87.59159971118247 (ACC): cached=false
Performance (-12, 8): 87.55165686018466 (ACC): cached=false
Performance (-11, 8): 87.55165686018466 (ACC): cached=false
Performance (-10, 8): 87.55165686018466 (ACC): cached=false
Performance (-9, 8): 87.55165686018466 (ACC): cached=false
Performance (-8, 8): 87.55165686018466 (ACC): cached=false
Performance (-7, 8): 87.55165686018466 (ACC): cached=false
Performance (-6, 8): 87.55165686018466 (ACC): cached=false
Performance (-5, 8): 87.55165686018466 (ACC): cached=false
Performance (-4, 8): 87.55165686018466 (ACC): cached=false
Performance (-3, 8): 87.55165686018466 (ACC): cached=false
Performance (-2, 8): 87.55165686018466 (ACC): cached=false
Performance (-12, 9): 87.55626565068441 (ACC): cached=false
Performance (-11, 9): 87.55626565068441 (ACC): cached=false
Performance (-10, 9): 87.55626565068441 (ACC): cached=false
Performance (-9, 9): 87.55626565068441 (ACC): cached=false
Performance (-8, 9): 87.55626565068441 (ACC): cached=false
Performance (-7, 9): 87.55626565068441 (ACC): cached=false
Performance (-6, 9): 87.55626565068441 (ACC): cached=false
Performance (-5, 9): 87.55626565068441 (ACC): cached=false
Performance (-4, 9): 87.55626565068441 (ACC): cached=false
Performance (-3, 9): 87.55626565068441 (ACC): cached=false
Performance (-2, 9): 87.55626565068441 (ACC): cached=false
Performance (-12, 10): 87.59774476518213 (ACC): cached=false
Performance (-11, 10): 87.59774476518213 (ACC): cached=false
Performance (-10, 10): 87.59774476518213 (ACC): cached=false
Performance (-9, 10): 87.59774476518213 (ACC): cached=false
Performance (-8, 10): 87.59774476518213 (ACC): cached=false
Performance (-7, 10): 87.59774476518213 (ACC): cached=false
Performance (-6, 10): 87.59774476518213 (ACC): cached=false
Performance (-5, 10): 87.59774476518213 (ACC): cached=false
Performance (-4, 10): 87.59774476518213 (ACC): cached=false
Performance (-3, 10): 87.59774476518213 (ACC): cached=false
Performance (-2, 10): 87.59774476518213 (ACC): cached=false
Performance (-12, 11): 87.57777333968322 (ACC): cached=false
Performance (-11, 11): 87.57777333968322 (ACC): cached=false
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Performance (-10, 11): 87.57777333968322 (ACC): cached=false
Performance (-9, 11): 87.57777333968322 (ACC): cached=false
Performance (-8, 11): 87.57777333968322 (ACC): cached=false
Performance (-7, 11): 87.57777333968322 (ACC): cached=false
Performance (-6, 11): 87.57777333968322 (ACC): cached=false
Performance (-5, 11): 87.57777333968322 (ACC): cached=false
Performance (-4, 11): 87.57777333968322 (ACC): cached=false
Performance (-3, 11): 87.57777333968322 (ACC): cached=false
Performance (-2, 11): 87.57777333968322 (ACC): cached=false
Performance (-12, 12): 87.54551180618499 (ACC): cached=false
Performance (-11, 12): 87.54551180618499 (ACC): cached=false
Performance (-10, 12): 87.54551180618499 (ACC): cached=false
Performance (-9, 12): 87.54551180618499 (ACC): cached=false
Performance (-8, 12): 87.54551180618499 (ACC): cached=false
Performance (-7, 12): 87.54551180618499 (ACC): cached=false
Performance (-6, 12): 87.54551180618499 (ACC): cached=false
Performance (-5, 12): 87.54551180618499 (ACC): cached=false
Performance (-4, 12): 87.54551180618499 (ACC): cached=false
Performance (-3, 12): 87.54551180618499 (ACC): cached=false
Performance (-2, 12): 87.54551180618499 (ACC): cached=false
Performance (-12, 13): 87.54704806968492 (ACC): cached=false
Performance (-11, 13): 87.54704806968492 (ACC): cached=false
Performance (-10, 13): 87.54704806968492 (ACC): cached=false
Performance (-9, 13): 87.54704806968492 (ACC): cached=false
Performance (-8, 13): 87.54704806968492 (ACC): cached=false
Performance (-7, 13): 87.54704806968492 (ACC): cached=false
Performance (-6, 13): 87.54704806968492 (ACC): cached=false
Performance (-5, 13): 87.54704806968492 (ACC): cached=false
Performance (-4, 13): 87.54704806968492 (ACC): cached=false
Performance (-3, 13): 87.54704806968492 (ACC): cached=false
Performance (-2, 13): 87.54704806968492 (ACC): cached=false
Performance (-12, 14): 87.55780191418432 (ACC): cached=false
Performance (-11, 14): 87.55780191418432 (ACC): cached=false
Performance (-10, 14): 87.55780191418432 (ACC): cached=false
Performance (-9, 14): 87.55780191418432 (ACC): cached=false
Performance (-8, 14): 87.55780191418432 (ACC): cached=false
Performance (-7, 14): 87.55780191418432 (ACC): cached=false
Performance (-6, 14): 87.55780191418432 (ACC): cached=false
Performance (-5, 14): 87.55780191418432 (ACC): cached=false
Performance (-4, 14): 87.55780191418432 (ACC): cached=false
Performance (-3, 14): 87.55780191418432 (ACC): cached=false
Performance (-2, 14): 87.55933817768424 (ACC): cached=false
Performance (-12, 15): 87.55933817768424 (ACC): cached=false
Performance (-11, 15): 87.55933817768424 (ACC): cached=false
Performance (-10, 15): 87.55933817768424 (ACC): cached=false
Performance (-9, 15): 87.55933817768424 (ACC): cached=false
Performance (-8, 15): 87.55933817768424 (ACC): cached=false
Performance (-7, 15): 87.55933817768424 (ACC): cached=false
Performance (-6, 15): 87.55933817768424 (ACC): cached=false
Performance (-5, 15): 87.55933817768424 (ACC): cached=false
Performance (-4, 15): 87.55933817768424 (ACC): cached=false
Performance (-3, 15): 87.55933817768424 (ACC): cached=false
Performance (-2, 15): 87.55933817768424 (ACC): cached=false

Correlation coefficient:
2-dimensional space:
```

```
 - 1. dimension: classifier.ridge, min: -12.0, max: -2.0, step: 1.0
 - 2. dimension: classifier.maxIts, min: 1.0, max: 15.0, step: 1.0
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Root mean squared error:
2-dimensional space:
 - 1. dimension: classifier.ridge, min: -12.0, max: -2.0, step: 1.0
 - 2. dimension: classifier.maxIts, min: 1.0, max: 15.0, step: 1.0
0.31510446918195656
0.31510446918195617
0.31510446918195245
0.31510446918191654
0.3151044691815733
0.31510446917810503
0.31510446914342194
0.315104468796629
0.3151044653286848
0.31510443064948895
0.3151040838829447
0.31526429881264434
0.315264298812644
0.3152642988126412
0.3152642988126109
0.3152642988123119
0.3152642988093281
0.31526429877949025
0.3152642984811336
0.3152642954975668
0.31526426566199656
0.31526396731870693
0.3150999699212146
0.31509996992121425
0.3150999699212108
0.3150999699211744
0.31509996992080785
0.3150999699171413
0.315099969880485
0.3150999695139192
0.31509996584825667
0.31509992919192165
0.3150995626577105
0.31542745742889455
0.31541961854555234
0.31541961854555206
0.3154196185455472
0.3154196185454947
0.3154196185449776
0.31541961853979894
0.31541961848800887
0.3154196179701081
0.31541961279111486
0.3154195610018258
0.3154190431761864
0.31542800708211377
0.31542800708211366
0.31542800708210794
0.3154280070820588
0.31542800708156365

```
0.3154280070766186
0.3154280070271433
0.315428006532394
0.3154280015849238
0.3154279521108243
0.315182530342234487
0.3151825303422343
0.3151825303422327
0.3151825303420206
0.3151825303418911
0.3151825303387683
0.3151825303075468
0.315182529995342
0.3151825268732771
0.3151824956527425
0.31518218345906435
0.31523842301021654
0.31523842301021643
0.31523842301021326
0.3152384230101828
0.3152384230098764
0.31523842300681687
0.3152384229762137
0.31523842267019114
0.31523841960996457
0.3152383890078497
0.315238083002014
0.3154132672055982
0.3154132672055978
0.31541326720559226
0.31541326720554574
0.31541326720507645
0.3154132672003798
0.3154132671534092
0.3154132666837183
0.3154132619868241
0.31541321501834724
0.3154127453822833
0.31519061855951064
0.31519061855951036
0.315190618559505
0.315190618559464
0.3151906185590577
0.315190618554987
0.3151906185142847
0.3151906181072916s
0.3151906140373499
0.31519057333828937
0.3151901663838372
0.31582191029306256
0.3158219102930622
0.3158219102930591
0.31582191029302903
0.3158219102927249
0.3158219102968754
0.3158219102593111
```

```
0.315821909955556
0.31582190691800555
0.3158218765426593
0.31582157280529016
0.3172592854551143
0.31725928545511406
0.31725928545511084
0.31725928545507837
0.31725928545474646
0.3172592854514433
0.31725928541840154
0.3172592850880076
0.31725928178406065
0.3172592487446945
0.3172589183597605
0.31802852337987697
0.3180285233798769
0.3180285233798733
0.3180285233798376
0.3180285233794846
0.3180285233759512
0.318028523340611
0.3180285229872192
0.31802851945329397
0.3180284841141466
0.31802813073340946
0.31991826163137765
0.3199182616313775
0.31991826163137405
0.3199182616313377
0.3199182616309702
0.31991826162729814
0.31991826159057785
0.3199182612233948
0.3199182575515538
0.3199182208332361
0.31991785365944664
0.32476907224886914
0.3247690722488687
0.32476907224886464
0.3247690722488227
0.3247690722484044
0.3247690722442382
0.3247690722025631
0.32476907178578546
0.3247690676180449
0.324769025940732
0.3247686091780312
0.34719324317685024
0.34719324317684463
0.34719324317678807
0.3471932431762284
0.34719324317063993
0.34719324311473104
0.34719324255565903
```

0.34719323696492005
0.3471931810576169
0.3471926219923435

Root relative squared error:
2-dimensional space:
 - 1. dimension: classifier.ridge, min: -12.0, max: -2.0, step: 1.0
 - 2. dimension: classifier.maxIts, min: 1.0, max: 15.0, step: 1.0
77.76358151710255
77.76358151710245
77.76358151710154
77.76358151709267
77.76358151700796
77.76358151615204
77.76358150759272
77.76358142200885
77.76358056616647
77.76357200780332
77.76348643044385
77.80302533885191
77.80302533885182
77.80302533885113
77.80302533884365
77.80302533876986
77.80302533803349
77.80302533066991
77.80302525703947
77.80302452073497
77.80301715771405
77.80294353056816
77.76247115954277
77.7624711595427
77.76247115954185
77.76247115953285
77.7624711594424
77.76247115853754
77.76247114949125
77.76247105902772
77.76247015439107
77.76246110809635
77.76237065234025
77.8432907098507
77.84135617796238
77.84135617796231
77.8413561779611
77.84135617794816
77.84135617782053
77.84135617654252
77.84135616376142
77.84135603595041
77.84135475784394
77.84134197693793
77.84121418447461
77.843426356936635

77.84342635693632
77.84342635693491
77.84342635692279
77.84342635680059
77.84342635558022
77.84342634337037
77.84342622127284
77.84342500030316
77.84341279075508
77.78284597062294
77.7828459706228
77.7828459706224
77.78284597061484
77.78284597053809
77.78284596976744
77.78284596206238
77.78284588501441
77.78284511453042
77.7828374097187
77.78276036448165
77.79663953583032
77.7966395358303
77.79663953582951
77.796639535822
77.7966395357464
77.79663953499133
77.79663952743887
77.79663945191659
77.79663869669348
77.79663114449956
77.79655562633947
77.83978875194792
77.83978875194782
77.83978875194646
77.83978875193499
77.83978875181916
77.8397887506601
77.83978873906838
77.83978862315492
77.83978746402407
77.83977587283023
77.8396599729116
77.78484203480154
77.78484203480147
77.78484203480014
77.78484203479003
77.78484203468976
77.78484203368517
77.78484202364038
77.78484192319993
77.78484091879257
77.78483087480708
77.78473044387447
77.94063641725059
77.9406364172505
77.94063641724973

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77.94063641724232
77.94063641716725
77.94063641641768
77.94063640892118
77.94063633395847
77.94063558433152
77.94062808810108
77.94055312976829
78.29536144185926
78.29536144185919
78.2953614418584
78.29536144185039
78.29536144176846
78.29536144095329
78.29536143279903
78.29536135126222
78.29536053589216
78.29535238221713
78.29527084762064
78.48519910497976
78.48519910497974
78.48519910497885
78.48519910497004
78.48519910488292
78.48519910401093
78.48519909528943
78.48519900807705
78.48519813595142
78.48518941472105
78.48510220506697
78.95156130843584
78.9515613084358
78.95156130843496
78.95156130842598
78.95156130833529
78.95156130742907
78.951561298367
78.95156120775111
78.9515603015897 1
78.95155123999851
78.951460626403
80.14867669006347
80.14867669006337
80.14867669006236
80.148676690052
80.14867668994877
80.1486766889206
80.14867667863577
80.14867657578058
80.1486755472378
80.14866526183266
80.14856241035505
85.68266308016
85.68266308015987
85.68266308015848
85.68266308014452
```

85.6826630800064
85.68266307862724
85.68266306482967
85.68266292685816
85.68266154713832
85.68264774996135
85.68250978010623

Mean absolute error:
2-dimensional space:
 - 1. dimension: classifier.ridge, min: -12.0, max: -2.0, step: 1.0
 - 2. dimension: classifier.maxIts, min: 1.0, max: 15.0, step: 1.0
0.15494738871877933
0.15494738871877972
0.15494738871878386
0.15494738871882083
0.15494738871919403
0.15494738872290037
0.1549473887599906
0.1549473891309081
0.15494739284004436
0.1549474299311759
0.1549478008173252
0.15506047746336948
0.15506047746336968
0.1550604774633745
0.15506047746342239
0.15506047746391866
0.15506047746886492
0.1550604775183046
0.1550604780129936
0.15506048295962377
0.15506053242569823
0.15506102706420802
0.15484920017953627
0.1548492001795365
0.15484920017953974
0.15484920017957626
0.15484920017993573
0.15484920018352327
0.15484920021941442
0.15484920057831814
0.1548492041673679
0.1548492400576603
0.1548495989410044
0.1551345994234804
0.15510860522024167
0.15510860522024186
0.15510860522024303
0.15510860522026426
0.1551086052204799
0.15510860522263434
0.155108605244175
0.15510860545958122

0.15510860761363382
0.1551086291543613
0.1551088445803298
0.15513435677099896
0.15513435677099913
0.15513435677100038
0.1551343567710218
0.15513435677124274
0.15513435677342233
0.15513435679526352
0.1551343570136353
0.15513435919737245
0.1551343810348863
0.15523300082488742
0.15523300082488775
0.15523300082488983
0.15523300082492714
0.15523300082528776
0.15523300082889016
0.15523300086494918
0.15523300122551292
0.15523300483114924
0.1552330408875302
0.15523340145468079
0.15389070569081523
0.1538907056908155
0.15389070569081956
0.15389070569086097
0.15389070569127344
0.15389070569541466
0.1538907057368356
0.15389070615103287
0.15389071029301815
0.1538907517129421
0.15389116592121613
0.15511053508714406
0.15511053508714429
0.15511053508714573
0.15511053508717204
0.15511053508743503
0.1551105350900614
0.15511053511635034
0.1551105353792071
0.15511053800779914
0.15511056429369877
0.15511082715235852
0.15481135346306368
0.15481135346306416
0.15481135346306643
0.1548113534631006
0.15481135346343372
0.15481135346677205
0.15481135350013467
0.15481135383377595
0.15481135717017797
0.15481139053404666

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0.15481172415832004
0.1550721777652865
0.15507217776528703
0.15507217776529061
0.15507217776532592
0.15507217776566204
0.1550721777690243
0.15507217780264376
0.15507217813885915
0.15507218150098642
0.15507221512225491
0.15507255133556283
0.15460411587666856
0.15460411587666906
0.15460411587667441
0.15460411587673062
0.15460411587730322
0.15460411588303677
0.1546041159403834
0.15460411651383524
0.1546041222483549
0.15460417959351405
0.15460475304347573
0.15648305826853057
0.15648305826853096
0.15648305826853573
0.15648305826857728
0.1564830582690027
0.1564830582732753
0.1564830583159648
0.15648305874288418
0.1564830630120675
0.15648310570390808
0.15648353262286438
0.15569130779723586
0.15569130779723642
0.1556913077972419
0.15569130779729862
0.15569130779786194
0.15569130780348012
0.1556913078596839
0.1556913084216969
0.15569131404184397
0.1556913702432815
0.15569193225527203
0.16444427565278505
0.1644442756527857
0.16444427565279085
0.16444427565284975
0.1644442756534301
0.16444427565924422
0.16444427571736628
0.16444427629861047
0.16444428211104462
0.16444434023537713
0.16444492147763712
```

```
0.206925884834936
0.20692588483493624
0.20692588483493812
0.2069258848349579
0.2069258848351712
0.20692588483722865
0.20692588485783897
0.20692588506392945
0.2069258871248697
0.20692590773424258
0.20692611382846374
```

```
Root absolute error:
2-dimensional space:
 - 1. dimension: classifier.ridge, min: -12.0, max: -2.0, step: 1.0
 - 2. dimension: classifier.maxIts, min: 1.0, max: 15.0, step: 1.0
47.18347273819723
47.18347273819735
47.18347273819861
47.183472738209865
47.18347273832351
47.18347273945214
47.18347275074659
47.18347286369574
47.18347399317543
47.183485287902045
47.183598227504696
47.21790971542858
47.21790971542865
47.21790971543012
47.21790971544469
47.217909715595816
47.21790971710202
47.21790973216491
47.2179098827962
47.2179113891087
47.21792645216459
47.21807707595267
47.15357306513474
47.1535730651348
47.153573065135795
47.15357306514692
47.153573065256374
47.15357306634883
47.15357307727815
47.15357318656894
47.15357427948075
47.1535852085364
47.1536944931305
47.24048080561032
47.232565236396745
47.2325652363968
47.23256523639716
47.23256523640362
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47.232565236469284
47.23256523712534
47.23256524368496
47.23256530927871
47.232565965215436
47.232572524644
47.23263812462214
47.240406914808815
47.240406914808865
47.24040691480924
47.24040691481577
47.240406914883046
47.240406915546764
47.24040692197685
47.240406988694694
47.24040765367075
47.24041430347458
47.27044529793948
47.27044529793959
47.27044529794022
47.270445297951575
47.27044529806139
47.27044529915837
47.270445310138804
47.2704454199351
47.27044651789774
47.27045749752948
47.270567294864314
46.861699165534134
46.86169916553421
46.86169916553545
46.86169916554806
46.86169916567366
46.86169916693472
46.86169917954793
46.861699305676325
46.86170056696411
46.86171317986368
46.86183931161051
47.23315290568972
47.23315290568979
47.23315290569023
47.23315290569824
47.233152905778326
47.233152906578084
47.23315291458341
47.23315299462668
47.233153795066755
47.23316179946127
47.23324184330396
47.14204825319902
47.142048253199164
47.14204825319986
47.14204825321026
47.1420482533117
47.142048254328266

47.14204826448761
47.142048366085675
47.142049382063
47.14205954179013
47.14216113467232
47.22147260784707
47.22147260784723
47.22147260784833
47.22147260785907
47.221472607961424
47.22147260898527
47.22147261922284
47.22147272160475
47.22147374541574
47.22148398352442
47.22158636480093
47.0789417427321
47.07894174273225
47.078941742733875
47.07894174275099
47.07894174292536
47.0789417446713
47.07894176213408
47.078941936757545
47.07894368299254
47.07896114533105
47.07913576821987
47.65110386728372
47.651103867283844
47.6511038672853
47.65110386729795
47.651103867427494
47.651103868728555
47.65110388172806
47.6511040117305
47.65110531175173
47.65111831196628
47.651248314279336
47.41000566558644
47.4100056655866
47.41000566558828
47.41005665605546
47.41005665777085
47.41005667487894
47.41005684602666
47.41000585574285
47.41000756714992
47.41002468121049
47.410195821089985
50.07539695488519
50.075396954885385
50.075396954886955
50.07539695490489
50.07539695508161
50.07539695685209
50.075396974551005

50.07539715154733
50.07539892150829
50.07541662111511
50.07559361685899
63.01159333286155
63.011593332861615
63.01159333286219
63.011593332868216
63.011593332933174
63.01159333355969
63.0115933398358
63.011593402593
63.011594030175814
63.01160030599492
63.01166306433597

Combined = (1-abs(CC)) + RRSE + RAE:
2-dimensional space:
 - 1. dimension: classifier.ridge, min: -12.0, max: -2.0, step: 1.0
 - 2. dimension: classifier.maxIts, min: 1.0, max: 15.0, step: 1.0
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Accuracy:
2-dimensional space:
 - 1. dimension: classifier.ridge, min: -12.0, max: -2.0, step: 1.0
 - 2. dimension: classifier.maxIts, min: 1.0, max: 15.0, step: 1.0
87.59774476518213
87.59774476518213
87.59774476518213
87.59774476518213
87.59774476518213
87.59774476518213
87.59774476518213
87.59774476518213
87.59774476518213
87.59774476518213
87.59159971118247
87.59159971118247
87.59159971118247
87.59159971118247
87.59159971118247
87.59159971118247
87.59159971118247
87.59159971118247
87.59159971118247
87.59159971118247
87.57777333968322
87.57777333968322
87.57777333968322
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87.57777333968322
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87.57777333968322
87.55933817768424
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87.55933817768424
87.55933817768424
87.55933817768424
87.55780191418432
87.55780191418432
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87.55780191418432
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87.55780191418432
87.55626565068441
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87.55626565068441
87.55165686018466
87.55165686018466
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87.55165686018466
87.54704806968492
87.54704806968492
87.54704806968492
87.54704806968492
87.54704806968492
87.54704806968492
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87.54704806968492
87.54551180618499
87.54551180618499
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87.54551180618499
87.53783048868542
87.53783048868542
87.53783048868542
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87.44565467869049
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87.44565467869049
87.44565467869049
87.44565467869049
87.40417556419277
87.40417556419277
87.40417556419277
87.40417556419277
87.40417556419277
87.40417556419277
87.40417556419277
87.40417556419277
87.40417556419277
87.40417556419277
87.35962392269522
87.35962392269522
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87.35962392269522
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87.35962392269522
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87.35962392269522
86.9125712442198
86.9125712442198
86.9125712442198
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86.9125712442198
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86.9125712442198
86.9125712442198
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86.9125712442198
84.24408154486657
84.24408154486657
84.24408154486657
84.24408154486657
84.24408154486657
84.24408154486657
84.24408154486657
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84.24408154486657
84.24408154486657

Kappa:
2-dimensional space:
 - 1. dimension: classifier.ridge, min: -12.0, max: -2.0, step: 1.0
 - 2. dimension: classifier.maxIts, min: 1.0, max: 15.0, step: 1.0
0.5880876936456129
0.5880876936456129
0.5880876936456129
0.5880876936456129
0.5880876936456129
0.5880876936456129
0.5880876936456129
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0.5880876936456129
0.5880876936456129
0.5889158128739719
0.5889158128739719
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0.5889158128739719
0.5889158128739719
0.5889158128739719
0.5869428469597775
0.5869428469597775
0.5869428469597775
0.5869428469597775

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0.5869428469597775
0.5869428469597775
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0.5869428469597775
0.587810132843868
0.5873917963256202
0.5873917963256202
0.5873917963256202
0.5873917963256202
0.5873917963256202
0.5873917963256202
0.5873917963256202
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0.5873917963256202
0.5877715253296836
0.5877715253296836
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0.5877715253296836
0.5876591482609916
0.5876591482609916
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0.5876591482609916
0.5861115954731454
0.5861115954731454
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0.5861115954731454
0.5861115954731454
0.5870581401796853
0.5870581401796853
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0.5876140202787992
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0.584736975814661
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0.5844659453874812
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0.5789329796499071
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0.5789329796499071
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0.573340639239265
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0.543642679097106
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0.543642679097106


Best performance:
Performance (-2, 1): 84.24408154486657 (ACC)

Result of Step 1: -12, 10

=== Initial space - End ===

Center is on border of space.

Final result:-12, 10
Classifier: weka.classifiers.functions.Logistic -R 1.0E-12 -M 10
Shutting down thread pool...
Shutting down thread pool...
Starting thread pool with 1 slots...

weka.classifiers.meta.MultiSearch
=================================
Options: -E ACC -search "weka.core.setupgenerator.MathParameter -property classifier.ridge
-min -12.0 -max -2.0 -step 1.0 -base 10.0 -expression pow(BASE,I)" -search
"weka.core.setupgenerator.MathParameter -property classifier.maxIts -min 1.0 -max 15.0 -step
1.0 -base 10.0 -expression I" -sample-size 100.0 -log-file C:\Users\Su\Desktop\log.txt
-initial-folds 10 -subsequent-folds 10 -num-slots 1 -S 1 -W
weka.classifiers.functions.Logistic -- -R 1.0E-8 -M -1

Step 1:
```

```
=== Initial space - Start ===
Determining best values with 10-fold CV in space:
2-dimensional space:
 - 1. dimension: classifier.ridge, min: -12.0, max: -2.0, step: 1.0
 - 2. dimension: classifier.maxIts, min: 1.0, max: 15.0, step: 1.0

Performance (-12, 1): 84.30706834836312 (ACC): cached=false
Performance (-11, 1): 84.30706834836312 (ACC): cached=false
Performance (-10, 1): 84.30706834836312 (ACC): cached=false
Performance (-9, 1): 84.30706834836312 (ACC): cached=false
Performance (-8, 1): 84.30706834836312 (ACC): cached=false
Performance (-7, 1): 84.30706834836312 (ACC): cached=false
Performance (-6, 1): 84.30706834836312 (ACC): cached=false
Performance (-5, 1): 84.30706834836312 (ACC): cached=false
Performance (-4, 1): 84.30706834836312 (ACC): cached=false
Performance (-3, 1): 84.30706834836312 (ACC): cached=false
Performance (-2, 1): 84.30706834836312 (ACC): cached=false
Performance (-12, 2): 87.03239979721322 (ACC): cached=false
Performance (-11, 2): 87.03239979721322 (ACC): cached=false
Performance (-10, 2): 87.03239979721322 (ACC): cached=false
Performance (-9, 2): 87.03239979721322 (ACC): cached=false
Performance (-8, 2): 87.03239979721322 (ACC): cached=false
Performance (-7, 2): 87.03239979721322 (ACC): cached=false
Performance (-6, 2): 87.03239979721322 (ACC): cached=false
Performance (-5, 2): 87.03239979721322 (ACC): cached=false
Performance (-4, 2): 87.03239979721322 (ACC): cached=false
Performance (-3, 2): 87.03239979721322 (ACC): cached=false
Performance (-2, 2): 87.03239979721322 (ACC): cached=false
Performance (-12, 3): 87.44411841519057 (ACC): cached=false
Performance (-11, 3): 87.44411841519057 (ACC): cached=false
Performance (-10, 3): 87.44411841519057 (ACC): cached=false
Performance (-9, 3): 87.44411841519057 (ACC): cached=false
Performance (-8, 3): 87.44411841519057 (ACC): cached=false
Performance (-7, 3): 87.44411841519057 (ACC): cached=false
Performance (-6, 3): 87.44411841519057 (ACC): cached=false
Performance (-5, 3): 87.44411841519057 (ACC): cached=false
Performance (-4, 3): 87.44411841519057 (ACC): cached=false
Performance (-3, 3): 87.44411841519057 (ACC): cached=false
Performance (-2, 3): 87.44411841519057 (ACC): cached=false
Performance (-12, 4): 87.42721951669151 (ACC): cached=false
Performance (-11, 4): 87.42721951669151 (ACC): cached=false
Performance (-10, 4): 87.42721951669151 (ACC): cached=false
Performance (-9, 4): 87.42721951669151 (ACC): cached=false
Performance (-8, 4): 87.42721951669151 (ACC): cached=false
Performance (-7, 4): 87.42721951669151 (ACC): cached=false
Performance (-6, 4): 87.42721951669151 (ACC): cached=false
Performance (-5, 4): 87.42721951669151 (ACC): cached=false
Performance (-4, 4): 87.42721951669151 (ACC): cached=false
Performance (-3, 4): 87.42721951669151 (ACC): cached=false
Performance (-2, 4): 87.42721951669151 (ACC): cached=false
Performance (-12, 5): 87.46101731368964 (ACC): cached=false
Performance (-11, 5): 87.46101731368964 (ACC): cached=false
Performance (-10, 5): 87.46101731368964 (ACC): cached=false
Performance (-9, 5): 87.46101731368964 (ACC): cached=false
Performance (-8, 5): 87.46101731368964 (ACC): cached=false
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Performance (-7, 5): 87.46101731368964 (ACC): cached=false
Performance (-6, 5): 87.46101731368964 (ACC): cached=false
Performance (-5, 5): 87.46101731368964 (ACC): cached=false
Performance (-4, 5): 87.46101731368964 (ACC): cached=false
Performance (-3, 5): 87.46101731368964 (ACC): cached=false
Performance (-2, 5): 87.46101731368964 (ACC): cached=false
Performance (-12, 6): 87.53014917118584 (ACC): cached=false
Performance (-11, 6): 87.53014917118584 (ACC): cached=false
Performance (-10, 6): 87.53014917118584 (ACC): cached=false
Performance (-9, 6): 87.53014917118584 (ACC): cached=false
Performance (-8, 6): 87.53014917118584 (ACC): cached=false
Performance (-7, 6): 87.53014917118584 (ACC): cached=false
Performance (-6, 6): 87.53014917118584 (ACC): cached=false
Performance (-5, 6): 87.53014917118584 (ACC): cached=false
Performance (-4, 6): 87.53014917118584 (ACC): cached=false
Performance (-3, 6): 87.53014917118584 (ACC): cached=false
Performance (-2, 6): 87.53014917118584 (ACC): cached=false
Performance (-12, 7): 87.63307882568019 (ACC): cached=false
Performance (-11, 7): 87.63307882568019 (ACC): cached=false
Performance (-10, 7): 87.63307882568019 (ACC): cached=false
Performance (-9, 7): 87.63307882568019 (ACC): cached=false
Performance (-8, 7): 87.63307882568019 (ACC): cached=false
Performance (-7, 7): 87.63307882568019 (ACC): cached=false
Performance (-6, 7): 87.63307882568019 (ACC): cached=false
Performance (-5, 7): 87.63307882568019 (ACC): cached=false
Performance (-4, 7): 87.63307882568019 (ACC): cached=false
Performance (-3, 7): 87.63307882568019 (ACC): cached=false
Performance (-2, 7): 87.63307882568019 (ACC): cached=false
Performance (-12, 8): 87.61464366368119 (ACC): cached=false
Performance (-11, 8): 87.61464366368119 (ACC): cached=false
Performance (-10, 8): 87.61464366368119 (ACC): cached=false
Performance (-9, 8): 87.61464366368119 (ACC): cached=false
Performance (-8, 8): 87.61464366368119 (ACC): cached=false
Performance (-7, 8): 87.61464366368119 (ACC): cached=false
Performance (-6, 8): 87.61464366368119 (ACC): cached=false
Performance (-5, 8): 87.61464366368119 (ACC): cached=false
Performance (-4, 8): 87.61464366368119 (ACC): cached=false
Performance (-3, 8): 87.61464366368119 (ACC): cached=false
Performance (-2, 8): 87.61464366368119 (ACC): cached=false
Performance (-12, 9): 87.59620850168221 (ACC): cached=false
Performance (-11, 9): 87.59620850168221 (ACC): cached=false
Performance (-10, 9): 87.59620850168221 (ACC): cached=false
Performance (-9, 9): 87.59620850168221 (ACC): cached=false
Performance (-8, 9): 87.59620850168221 (ACC): cached=false
Performance (-7, 9): 87.59620850168221 (ACC): cached=false
Performance (-6, 9): 87.59620850168221 (ACC): cached=false
Performance (-5, 9): 87.59620850168221 (ACC): cached=false
Performance (-4, 9): 87.59620850168221 (ACC): cached=false
Performance (-3, 9): 87.59620850168221 (ACC): cached=false
Performance (-2, 9): 87.59620850168221 (ACC): cached=false
Performance (-12, 10): 87.59620850168221 (ACC): cached=false
Performance (-11, 10): 87.59620850168221 (ACC): cached=false
Performance (-10, 10): 87.59620850168221 (ACC): cached=false
Performance (-9, 10): 87.59620850168221 (ACC): cached=false
Performance (-8, 10): 87.59620850168221 (ACC): cached=false
Performance (-7, 10): 87.59620850168221 (ACC): cached=false
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Performance (-6, 10): 87.59620850168221 (ACC): cached=false
Performance (-5, 10): 87.59620850168221 (ACC): cached=false
Performance (-4, 10): 87.59620850168221 (ACC): cached=false
Performance (-3, 10): 87.59620850168221 (ACC): cached=false
Performance (-2, 10): 87.59620850168221 (ACC): cached=false
Performance (-12, 11): 87.63768761617993 (ACC): cached=false
Performance (-11, 11): 87.63768761617993 (ACC): cached=false
Performance (-10, 11): 87.63768761617993 (ACC): cached=false
Performance (-9, 11): 87.63768761617993 (ACC): cached=false
Performance (-8, 11): 87.63768761617993 (ACC): cached=false
Performance (-7, 11): 87.63768761617993 (ACC): cached=false
Performance (-6, 11): 87.63768761617993 (ACC): cached=false
Performance (-5, 11): 87.63768761617993 (ACC): cached=false
Performance (-4, 11): 87.63768761617993 (ACC): cached=false
Performance (-3, 11): 87.63768761617993 (ACC): cached=false
Performance (-2, 11): 87.63768761617993 (ACC): cached=false
Performance (-12, 12): 87.66841288617823 (ACC): cached=false
Performance (-11, 12): 87.66841288617823 (ACC): cached=false
Performance (-10, 12): 87.66841288617823 (ACC): cached=false
Performance (-9, 12): 87.66841288617823 (ACC): cached=false
Performance (-8, 12): 87.66841288617823 (ACC): cached=false
Performance (-7, 12): 87.66841288617823 (ACC): cached=false
Performance (-6, 12): 87.66841288617823 (ACC): cached=false
Performance (-5, 12): 87.66841288617823 (ACC): cached=false
Performance (-4, 12): 87.66841288617823 (ACC): cached=false
Performance (-3, 12): 87.66841288617823 (ACC): cached=false
Performance (-2, 12): 87.66841288617823 (ACC): cached=false
Performance (-12, 13): 87.68070299417757 (ACC): cached=false
Performance (-11, 13): 87.68070299417757 (ACC): cached=false
Performance (-10, 13): 87.68070299417757 (ACC): cached=false
Performance (-9, 13): 87.68070299417757 (ACC): cached=false
Performance (-8, 13): 87.68070299417757 (ACC): cached=false
Performance (-7, 13): 87.68070299417757 (ACC): cached=false
Performance (-6, 13): 87.68070299417757 (ACC): cached=false
Performance (-5, 13): 87.68070299417757 (ACC): cached=false
Performance (-4, 13): 87.68070299417757 (ACC): cached=false
Performance (-3, 13): 87.68070299417757 (ACC): cached=false
Performance (-2, 13): 87.68070299417757 (ACC): cached=false
Performance (-12, 14): 87.64383267017959 (ACC): cached=false
Performance (-11, 14): 87.64383267017959 (ACC): cached=false
Performance (-10, 14): 87.64383267017959 (ACC): cached=false
Performance (-9, 14): 87.64383267017959 (ACC): cached=false
Performance (-8, 14): 87.64383267017959 (ACC): cached=false
Performance (-7, 14): 87.64383267017959 (ACC): cached=false
Performance (-6, 14): 87.64383267017959 (ACC): cached=false
Performance (-5, 14): 87.64383267017959 (ACC): cached=false
Performance (-4, 14): 87.64383267017959 (ACC): cached=false
Performance (-3, 14): 87.64383267017959 (ACC): cached=false
Performance (-2, 14): 87.64383267017959 (ACC): cached=false
Performance (-12, 15): 87.62693377168051 (ACC): cached=false
Performance (-11, 15): 87.62693377168051 (ACC): cached=false
Performance (-10, 15): 87.62693377168051 (ACC): cached=false
Performance (-9, 15): 87.62693377168051 (ACC): cached=false
Performance (-8, 15): 87.62693377168051 (ACC): cached=false
Performance (-7, 15): 87.62693377168051 (ACC): cached=false
Performance (-6, 15): 87.62693377168051 (ACC): cached=false
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Performance (-5, 15): 87.62693377168051 (ACC): cached=false
Performance (-4, 15): 87.62693377168051 (ACC): cached=false
Performance (-3, 15): 87.62693377168051 (ACC): cached=false
Performance (-2, 15): 87.62693377168051 (ACC): cached=false


Correlation coefficient:
2-dimensional space:
 - 1. dimension: classifier.ridge, min: -12.0, max: -2.0, step: 1.0
 - 2. dimension: classifier.maxIts, min: 1.0, max: 15.0, step: 1.0
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Root mean squared error:
2-dimensional space:
 - 1. dimension: classifier.ridge, min: -12.0, max: -2.0, step: 1.0
 - 2. dimension: classifier.maxIts, min: 1.0, max: 15.0, step: 1.0
0.31488080573463995
0.314880805734639
0.3148808057346337
0.3148808057345859
0.31488080573410
0.314880805729328
0.3148808056815275
0.3148808052035075
0.3148808004233277
0.3148807526220091
0.3148802746592378
0.3146797356647491
0.3146797356647488
0.314679735664744
0.3146797356647022
0.3146797356642802
0.3146797356600713
0.3146797356179872
0.3146797351971513
0.31467973098877
0.31467968890537107
0.314679268109906
0.3149035290910782
0.3149035290910774
0.314903529091072
0.314903529091022
0.3149035290905144
0.3149035290854666
0.3149035290349749
0.3149035285300460
0.314903523480780
0.3149034729887158
0.3149029681279102
0.31462099630504065
0.3146209963050401
0.3146209963050368
0.3146209963049984
0.3146209963046171
0.3146209963008021
0.3146209962626491
0.3146209958811166
0.3146209920658050
0.3146209539130543

```
0.3146205724222226
0.31474183954957113
0.3147418395495709
0.3147418395495679
0.3147418395495366
0.3147418395492274
0.314741839546313316
0.3147418395151941
0.3147418392058058
0.3147418361119189
0.31474180517318523
0.3147414957989015
0.3148813151173709
0.31488131511737016
0.3148813151173643
0.31488131511731315
0.31488131511678963
0.31488131511156486
0.3148813150593243
0.31488131453693
0.3148813093129882
0.31488125707427933
0.31488073475650097
0.3147252850653195
0.3147252850653193
0.31472528506531666
0.31472528506528513
0.3147252850649802
0.3147252850619311
0.31472528503143826
0.3147252847265199
0.3147252816773313
0.3147252511855557
0.31472494627911635
0.3146872707715458
0.3146872707715453
0.31468727077154207
0.31468727077150727
0.31468727077115555
0.31468727076764186
0.3146872707324924
0.31468727038101224
0.3146872668662009
0.31468723171818497
0.3146868802454768
0.31457590906117816
0.3145759090611778
0.3145759090611747
0.31457590906113936
0.31457590906077953
0.3145759090571875
0.3145759090212729
0.3145759086621068
0.31457590507047395
0.3145758691544091
0.31457551002025724
```

```
0.31537341748952796
0.31537341748952785
0.3153734174895249
0.3153734174894927
0.3153734174891723
0.31537341748596653
0.31537341745391856
0.3153734171334248
0.3153734139284714
0.315373381879113
0.31537306140084653
0.3168840161841961
0.31688401618419587
0.31688401618419243
0.31688401618415674
0.31688401618381723
0.3168840161803879
0.31688401614609724
0.3168840158031842
0.3168840123740473
0.3168839780827859
0.3168836351788669
0.31971136514741993
0.3197113651474197
0.31971136514741544
0.3197113651473781
0.3197113651469971
0.31971136514319
0.31971136510510456
0.31971136472427514
0.31971136091597635
0.3197113228330914
0.31971094201422035
0.3178086726199973
0.31780867261999673
0.3178086726199937
0.3178086726199571
0.31780867261958307
0.3178086726158528
0.3178086725785503
0.3178086722055283
0.3178086684752888
0.317808631730192
0.3178082581611534
0.3241899684353657
0.324189968435365
0.32418996843536074
0.32418996843531894
0.3241899684348936
0.3241899684306419
0.32418996838812336
0.32418996796295574
0.324189963711262
0.324189921194413
0.3241894960362469
0.34725409533822993
```

0.3472540953382293
0.3472540953382235
0.3472540953381664
0.3472540953375911
0.3472540953318476
0.3472540952744063
0.3472540946999862
0.34725408895579235
0.3472540315139317
0.34725345710318956

Root relative squared error:
2-dimensional space:
 - 1. dimension: classifier.ridge, min: -12.0, max: -2.0, step: 1.0
 - 2. dimension: classifier.maxIts, min: 1.0, max: 15.0, step: 1.0
77.70838436054379
77.70838436054356
77.70838436054224
77.70838436053045
77.70838436041275
77.70838435923287
77.70838434743635
77.70838422946738
77.70838304978274
77.7083712530547
77.70825329821568
77.65876294828264
77.65876294828257
77.65876294828138
77.65876294827108
77.65876294816694
77.65876294712822
77.65876293674243
77.65876283288574
77.65876179431335
77.65875140869163
77.65864756198155
77.71399218192862
77.71399218192842
77.7139921819271
77.71399218191478
77.71399218178948
77.71399218054373
77.71399216808305
77.71399204347335
77.71399079738195
77.71397833661361
77.7138537436984
77.64426685751373
77.6442668575136
77.64426685751279
77.64426685750331
77.64426685740922
77.64426685646772

77.64426684705208
77.64426675289494
77.64426581132692
77.64425639573675
77.64416224888612
77.67408935898835
77.6740893589883
77.67408935898756
77.67408935897983
77.67408935890353
77.67408935813991
77.67408935050456
77.67408927415165
77.67408851062162
77.67408087535468
77.67400452590653
77.70851006940988
77.7085100694097
77.70851006940825
77.70851006939563
77.70851006926642
77.70851006797703
77.70851005508476
77.70850992616481
77.70850863696562
77.70849574514881
77.70836684408549
77.67000393300593
77.67000393300589
77.67000393300523
77.67000393299745
77.6700039329222
77.6700039321697
77.67000392464449
77.6700038493947
77.67000309689561
77.66999557193196
77.66992032508823
77.66062251216997
77.66062251216985
77.66062251216904
77.66062251216046
77.66062251207367
77.66062251120653
77.66062250253212
77.6606224157915
77.66062154838292
77.66061287432123
77.66052613554326
77.63313992690375
77.63313992690368
77.6331399269029
77.63313992689419
77.63313992680538
77.63313992591893
77.63313991705567

77.63313982841825
77.63313894205118
77.63313007844525
77.63304144892513
77.82995437336197
77.82995437336194
77.82995437336122
77.82995437335327
77.8299543732742
77.82995437248306
77.82995436457405
77.82995428548047
77.82995349454069
77.82994558518638
77.82986649542333
78.20274998948705
78.202749989487
78.20274998948615
78.20274998947734
78.20274998939355
78.20274998854725
78.20274998008476
78.2027498954584
78.20274904919313
78.20274058656705
78.20265596245198
78.90050201487007
78.90050201487001
78.90050201486896
78.90050201485974
78.90050201476573
78.90050201382618
78.9005020044272
78.90050191044358
78.90050097060622
78.90049157225799
78.9003975912383
78.43094286884357
78.43094286884345
78.43094286884269
78.43094286883365
78.43094286874135
78.43094286782078
78.43094285861501
78.43094276655815
78.43094184598479
78.43093264028202
78.43084058592713
80.00576159042951
80.00576159042936
80.00576159042829
80.00576159041798
80.00576159031301
80.00576158926376
80.00576157877073
80.00576147384504

80.00576042458373
80.00574993199228
80.00564500862578
85.69768058220998
85.69768058220984
85.6976805822084
85.69768058219432
85.69768058205234
85.69768058063491
85.69768056645917
85.69768042469994
85.6976790071095
85.69766483122419
85.69752307431199

Mean absolute error:
2-dimensional space:
 - 1. dimension: classifier.ridge, min: -12.0, max: -2.0, step: 1.0
 - 2. dimension: classifier.maxIts, min: 1.0, max: 15.0, step: 1.0
0.15366760775502214
0.1536676077550224
0.1536676077550265
0.15366760775505672
0.15366760775535482
0.15366760775834876
0.15366760778826347
0.15366760808741034
0.15366761107889265
0.15366764099393013
0.15366794016553406
0.15341837926936733
0.1534183792693672
0.15341837926937105
0.15341837926940596
0.15341837926976906
0.1534183792733812
0.15341837930949007
0.15341837967056926
0.15341838328137009
0.153418419389496
0.15341878048232688
0.15372815683690808
0.15372815683690821
0.15372815683691218
0.1537281568369364
0.15372815683718505
0.15372815683966506
0.1537281568644678
0.15372815711247403
0.15372815959257166
0.15372818439386035
0.15372843244068987
0.15343638798569117
0.15343638798569156

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0.15343638798569648
0.15343638798573353
0.15343638798610792
0.15343638798986467
0.1534363880274271
0.15343638840303708
0.1534363921591382
0.1534364297199702
0.15343680531177964
0.15366112463830656
0.15366112463830717
0.15366112463831266
0.15366112463836676
0.15366112463889645
0.153661124644189
0.153661124697122
0.153661125226429
0.1536611305195351
0.1536611834504235
0.1536617127447724
0.15370430230742055
0.15370430230742083
0.15370430230742407
0.15370430230745055
0.1537043023076926
0.15370430231015894
0.15370430233479038
0.15370430258111478
0.15370430504437196
0.15370432967739245
0.15370457605392399
0.15263352558369467
0.1526335255836949
0.1526335255836999
0.15263352558374346
0.15263352558419266
0.15263352558867982
0.1526335256335526
0.15263352608229938
0.1526333305697604
0.15263357544439352
0.15263402419453487
0.15377186063584738
0.1537718606358481
0.15377186063585396
0.15377186063589768
0.15377186063633358
0.15377186064073725
0.15377186068474055
0.1537718611248032
0.15377186552543415
0.15377190953227052
0.15377234965551906
0.15353251842680338
0.15353251842680357
0.1535325184268086
```

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0.153532518426852
0.15353251842727983
0.1535325184315893
0.1535325184746414
0.15353251890516886
0.15353252321045366
0.15353256626358416
0.15353299682347527
0.1539078183729226
0.15390781837292308
0.1539078183729265
0.1539078183729632
0.15390781837332387
0.15390781837695358
0.15390781841324624
0.15390781877616388
0.15390782240535594
0.15390785869731538
0.1539082216211922
0.15345281016536788
0.15345281016536866
0.15345281016537338
0.15345281016543108
0.1534528101659879
0.15345281017155785
0.15345281022724178
0.15345281078410708
0.15345281635275373
0.15345287203919464
0.15345342890159466
0.1545572739680888
0.1545572739680893
0.15455727396809535
0.15455727396815264
0.15455727396870397
0.15455727397423083
0.15455727402947805
0.15455727458194088
0.15455728010657602
0.1545573353529346
0.15455788781482097
0.15548270590685775
0.1554827059068581
0.15548270590686197
0.155482705906903
0.15548270590731902
0.155482705911488
0.15548270595315059
0.15548270636980585
0.15548271053637042
0.1554827522020189
0.1554831688592294
0.1625754530832755
0.16257545308327612
0.16257545308328142
0.16257545308333843
```

0.16257545308391858
0.16257545308969645
0.16257545314750696
0.16257545372557675
0.1625754595063042
0.16257551731354225
0.16257609538515436
0.2056330232966926
0.2056330232966928
0.20563302329669494
0.20563302329671623
0.20563302329691285
0.20563302329891597
0.20563302331895794
0.20563302351933627
0.2056330255231312
0.20563304556108442
0.20563324594123253

Root absolute error:
2-dimensional space:
 - 1. dimension: classifier.ridge, min: -12.0, max: -2.0, step: 1.0
 - 2. dimension: classifier.maxIts, min: 1.0, max: 15.0, step: 1.0
46.793762974685855
46.793762974685926
46.793762974687176
46.79376297469638
46.79376297478716
46.793762975698854
46.79376298480826
46.79376307590233
46.793763986847175
46.79377309636084
46.793864197962066
46.717869695323664
46.71786969532362
46.717869695324794
46.71786969533543
46.71786969544599
46.71786969654593
46.71786970754155
46.71786981749481
46.717870917030105
46.717881912418854
46.717991869830094
46.812200948878974
46.81220094887901
46.81220094888022
46.8122009488876
46.81220094896331
46.81220094971851
46.812200957271266
46.812201032792345
46.81220178801397

46.81220934032537
46.81228487377523
46.72335358106541
46.72335358106553
46.72335358106703
46.723353581078314
46.72335358119231
46.723353582336294
46.72335359377454
46.72335370815261
46.72335485193371
46.72336628969015
46.72348066222684
46.791788782262614
46.791788782262806
46.791788782264476
46.791788782280946
46.79178878244225
46.79178878405389
46.79178880017268
46.79178896135346
46.79179057317235
46.79180669130865
46.791967868245465
46.80493693784229
46.80493693784238
46.804936937843365
46.80493693785143
46.80493693792514
46.804936938676164
46.80493694617676
46.80493702118571
46.8049377712792
46.80494527235076
46.805020297173414
46.478871653552076
46.47887165355214
46.47887165355367
46.478871653566934
46.47887165370371
46.478871655070115
46.47887166873445
46.47887180538362
46.47887317187322
46.47888683677616
46.47902348696585
46.82550931775734
46.82550931775755
46.825509317759334
46.82550931777265
46.825509317905386
46.825509319246365
46.82550933264593
46.825509466650665
46.82551080669939
46.825524207347065

46.82565823053694
46.752626536776596
46.75262653677666
46.75262653677818
46.752626536791404
46.75262653692168
46.75262653823397
46.75262655134388
46.75262668244504
46.75262799345963
46.7526411036916
46.75277221471614
46.866910197332516
46.866910197332665
46.8669101973337
46.86691019734488
46.86691019745471
46.86691019856001
46.86691020961158
46.866910320124674
46.866911425260334
46.86692247662875
46.86703299161703
46.728354345992685
46.728354345992926
46.72835434599436
46.72835434601193
46.7283543461815
46.728354347877605
46.72835436483408
46.728354534406726
46.72835623013126
46.72837318736873
46.728542759131685
47.064677779107065
47.06467777910722
47.064677779109054
47.064677779126505
47.06467777929439
47.06467778097739
47.06467779780088
47.06467796603292
47.06467964835537
47.06469647158211
47.06486470333207
47.34648370700954
47.34648370700965
47.34648370701083
47.34648370702332
47.34648370715001
47.34648370841951
47.34648372110631
47.346483847983194
47.346485116755694
47.346497804481544
47.34662468196102

49.50631644639712
49.5063164463973
49.50631644639891
49.50631644641628
49.50631644659295
49.506316448352386
49.506316465956424
49.50631664198611
49.50631840229197
49.5063360053945
49.506512035580265
62.61790036618184
62.6179003661819
62.617900366182546
62.617900366189026
62.617900366248904
62.61790036685888
62.61790037296192
62.61790043397969
62.61790104416103
62.6179071459755
62.617968164307804

Combined = (1-abs(CC)) + RRSE + RAE:
2-dimensional space:
  - 1. dimension: classifier.ridge, min: -12.0, max: -2.0, step: 1.0
  - 2. dimension: classifier.maxIts, min: 1.0, max: 15.0, step: 1.0
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Accuracy:
2-dimensional space:
 - 1. dimension: classifier.ridge, min: -12.0, max: -2.0, step: 1.0
 - 2. dimension: classifier.maxIts, min: 1.0, max: 15.0, step: 1.0
87.68070299417757
87.68070299417757
87.68070299417757
87.68070299417757
87.68070299417757
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87.68070299417757
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87.68070299417757
87.66841288617823
87.66841288617823
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87.66841288617823
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87.66841288617823
87.64383267017959

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87.64383267017959
87.64383267017959
87.64383267017959
87.64383267017959
87.64383267017959
87.63768761617993
87.63768761617993
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87.63768761617993
87.63307882568019
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87.63307882568019
87.63307882568019
87.63307882568019
87.63307882568019
87.63307882568019
87.63307882568019
87.63307882568019
87.63307882568019
87.62693377168051
87.62693377168051
87.62693377168051
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87.62693377168051
87.61464366368119
87.61464366368119
87.61464366368119
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87.61464366368119
87.61464366368119
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87.61464366368119
87.59620850168221
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87.59620850168221
87.59620850168221
87.59620850168221
87.59620850168221
87.53014917118584
87.53014917118584
87.53014917118584
87.53014917118584
87.53014917118584
87.53014917118584
87.53014917118584
87.53014917118584
87.53014917118584
87.53014917118584
87.53014917118584
87.46101731368964
87.46101731368964
87.46101731368964
87.46101731368964
87.46101731368964
87.46101731368964
87.46101731368964
87.46101731368964
87.46101731368964
87.46101731368964
87.44411841519057
87.44411841519057
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87.42721951669151
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87.42721951669151
87.03239979721322
87.03239979721322
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87.03239979721322
84.30706834836312
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84.30706834836312
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84.30706834836312

Kappa:
2-dimensional space:
 - 1. dimension: classifier.ridge, min: -12.0, max: -2.0, step: 1.0
 - 2. dimension: classifier.maxIts, min: 1.0, max: 15.0, step: 1.0
0.5916242264435346
0.5916242264435346
0.5916242264435346
0.5916242264435346
0.5916242264435346
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0.5916242264435346
0.5904592565407585
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0.5904592565407585
0.5904592565407585

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0.5904592565407585
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0.5906462650669004
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0.589119531471389
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0.5902533427257518
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0.58970716271986
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0.5882920516052316
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0.5882920516052316
0.5882920516052316
0.5889336734942408
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0.5880736104732999
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0.5875932074900007
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0.5856152210559922
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0.5819105504969081
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0.5819105504969081
0.5855584093054197
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0.5769492236145312
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0.5471786761968563
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0.5471786761968563


Best performance:
Performance (-2, 1): 84.30706834836312 (ACC)

Result of Step 1: -12, 13

=== Initial space - End ===

Center is on border of space.

Final result:-12, 13
Classifier: weka.classifiers.functions.Logistic -R 1.0E-12 -M 13
Shutting down thread pool...
Shutting down thread pool...
Starting thread pool with 1 slots...

weka.classifiers.meta.MultiSearch
===============================
Options: -E ACC -search "weka.core.setupgenerator.MathParameter -property classifier.ridge
-min -12.0 -max -2.0 -step 1.0 -base 10.0 -expression pow(BASE,I)" -search
```

```
"weka.core.setupgenerator.MathParameter -property classifier.maxIts -min 1.0 -max 15.0 -step
1.0 -base 10.0 -expression I" -sample-size 100.0 -log-file C:\Users\Su\Desktop\log.txt
-initial-folds 10 -subsequent-folds 10 -num-slots 1 -S 1 -W
weka.classifiers.functions.Logistic -- -R 1.0E-8 -M -1


Step 1:



=== Initial space - Start ===
Determining best values with 10-fold CV in space:
2-dimensional space:
 - 1. dimension: classifier.ridge, min: -12.0, max: -2.0, step: 1.0
 - 2. dimension: classifier.maxIts, min: 1.0, max: 15.0, step: 1.0

Performance (-12, 1): 84.3411067072234 (ACC): cached=false
Performance (-11, 1): 84.3411067072234 (ACC): cached=false
Performance (-10, 1): 84.3411067072234 (ACC): cached=false
Performance (-9, 1): 84.3411067072234 (ACC): cached=false
Performance (-8, 1): 84.3411067072234 (ACC): cached=false
Performance (-7, 1): 84.3411067072234 (ACC): cached=false
Performance (-6, 1): 84.3411067072234 (ACC): cached=false
Performance (-5, 1): 84.3411067072234 (ACC): cached=false
Performance (-4, 1): 84.3411067072234 (ACC): cached=false
Performance (-3, 1): 84.3411067072234 (ACC): cached=false
Performance (-2, 1): 84.3411067072234 (ACC): cached=false
Performance (-12, 2): 87.08943988693274 (ACC): cached=false
Performance (-11, 2): 87.08943988693274 (ACC): cached=false
Performance (-10, 2): 87.08943988693274 (ACC): cached=false
Performance (-9, 2): 87.08943988693274 (ACC): cached=false
Performance (-8, 2): 87.08943988693274 (ACC): cached=false
Performance (-7, 2): 87.08943988693274 (ACC): cached=false
Performance (-6, 2): 87.08943988693274 (ACC): cached=false
Performance (-5, 2): 87.08943988693274 (ACC): cached=false
Performance (-4, 2): 87.08943988693274 (ACC): cached=false
Performance (-3, 2): 87.08943988693274 (ACC): cached=false
Performance (-2, 2): 87.08943988693274 (ACC): cached=false
Performance (-12, 3): 87.4596737026454 (ACC): cached=false
Performance (-11, 3): 87.4596737026454 (ACC): cached=false
Performance (-10, 3): 87.4596737026454 (ACC): cached=false
Performance (-9, 3): 87.4596737026454 (ACC): cached=false
Performance (-8, 3): 87.4596737026454 (ACC): cached=false
Performance (-7, 3): 87.4596737026454 (ACC): cached=false
Performance (-6, 3): 87.4596737026454 (ACC): cached=false
Performance (-5, 3): 87.4596737026454 (ACC): cached=false
Performance (-4, 3): 87.4596737026454 (ACC): cached=false
Performance (-3, 3): 87.4596737026454 (ACC): cached=false
Performance (-2, 3): 87.4596737026454 (ACC): cached=false
Performance (-12, 4): 87.48886226073064 (ACC): cached=false
Performance (-11, 4): 87.48886226073064 (ACC): cached=false
Performance (-10, 4): 87.48886226073064 (ACC): cached=false
Performance (-9, 4): 87.48886226073064 (ACC): cached=false
Performance (-8, 4): 87.48886226073064 (ACC): cached=false
Performance (-7, 4): 87.48886226073064 (ACC): cached=false
Performance (-6, 4): 87.48886226073064 (ACC): cached=false
Performance (-5, 4): 87.48886226073064 (ACC): cached=false
Performance (-4, 4): 87.48886226073064 (ACC): cached=false
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Performance (-3, 4): 87.48886226073064 (ACC): cached=false
Performance (-2, 4): 87.48886226073064 (ACC): cached=false
Performance (-12, 5): 87.50883337942054 (ACC): cached=false
Performance (-11, 5): 87.50883337942054 (ACC): cached=false
Performance (-10, 5): 87.50883337942054 (ACC): cached=false
Performance (-9, 5): 87.50883337942054 (ACC): cached=false
Performance (-8, 5): 87.50883337942054 (ACC): cached=false
Performance (-7, 5): 87.50883337942054 (ACC): cached=false
Performance (-6, 5): 87.50883337942054 (ACC): cached=false
Performance (-5, 5): 87.50883337942054 (ACC): cached=false
Performance (-4, 5): 87.50883337942054 (ACC): cached=false
Performance (-3, 5): 87.50883337942054 (ACC): cached=false
Performance (-2, 5): 87.50883337942054 (ACC): cached=false
Performance (-12, 6): 87.58564537438167 (ACC): cached=false
Performance (-11, 6): 87.58564537438167 (ACC): cached=false
Performance (-10, 6): 87.58564537438167 (ACC): cached=false
Performance (-9, 6): 87.58564537438167 (ACC): cached=false
Performance (-8, 6): 87.58564537438167 (ACC): cached=false
Performance (-7, 6): 87.58564537438167 (ACC): cached=false
Performance (-6, 6): 87.58564537438167 (ACC): cached=false
Performance (-5, 6): 87.58564537438167 (ACC): cached=false
Performance (-4, 6): 87.58564537438167 (ACC): cached=false
Performance (-3, 6): 87.58564537438167 (ACC): cached=false
Performance (-2, 6): 87.58564537438167 (ACC): cached=false
Performance (-12, 7): 87.68703720773036 (ACC): cached=false
Performance (-11, 7): 87.68703720773036 (ACC): cached=false
Performance (-10, 7): 87.68703720773036 (ACC): cached=false
Performance (-9, 7): 87.68703720773036 (ACC): cached=false
Performance (-8, 7): 87.68703720773036 (ACC): cached=false
Performance (-7, 7): 87.68703720773036 (ACC): cached=false
Performance (-6, 7): 87.68703720773036 (ACC): cached=false
Performance (-5, 7): 87.68703720773036 (ACC): cached=false
Performance (-4, 7): 87.68703720773036 (ACC): cached=false
Performance (-3, 7): 87.68703720773036 (ACC): cached=false
Performance (-2, 7): 87.68703720773036 (ACC): cached=false
Performance (-12, 8): 87.68550096783113 (ACC): cached=false
Performance (-11, 8): 87.68550096783113 (ACC): cached=false
Performance (-10, 8): 87.68550096783113 (ACC): cached=false
Performance (-9, 8): 87.68550096783113 (ACC): cached=false
Performance (-8, 8): 87.68550096783113 (ACC): cached=false
Performance (-7, 8): 87.68550096783113 (ACC): cached=false
Performance (-6, 8): 87.68550096783113 (ACC): cached=false
Performance (-5, 8): 87.68550096783113 (ACC): cached=false
Performance (-4, 8): 87.68550096783113 (ACC): cached=false
Performance (-3, 8): 87.68550096783113 (ACC): cached=false
Performance (-2, 8): 87.68550096783113 (ACC): cached=false
Performance (-12, 9): 87.65631240974591 (ACC): cached=false
Performance (-11, 9): 87.65631240974591 (ACC): cached=false
Performance (-10, 9): 87.65631240974591 (ACC): cached=false
Performance (-9, 9): 87.65631240974591 (ACC): cached=false
Performance (-8, 9): 87.65631240974591 (ACC): cached=false
Performance (-7, 9): 87.65631240974591 (ACC): cached=false
Performance (-6, 9): 87.65631240974591 (ACC): cached=false
Performance (-5, 9): 87.65631240974591 (ACC): cached=false
Performance (-4, 9): 87.65631240974591 (ACC): cached=false
Performance (-3, 9): 87.65631240974591 (ACC): cached=false
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Performance (-2, 9): 87.65631240974591 (ACC): cached=false
Performance (-12, 10): 87.66860232893968 (ACC): cached=false
Performance (-11, 10): 87.66860232893968 (ACC): cached=false
Performance (-10, 10): 87.66860232893968 (ACC): cached=false
Performance (-9, 10): 87.66860232893968 (ACC): cached=false
Performance (-8, 10): 87.66860232893968 (ACC): cached=false
Performance (-7, 10): 87.66860232893968 (ACC): cached=false
Performance (-6, 10): 87.66860232893968 (ACC): cached=false
Performance (-5, 10): 87.66860232893968 (ACC): cached=false
Performance (-4, 10): 87.66860232893968 (ACC): cached=false
Performance (-3, 10): 87.66860232893968 (ACC): cached=false
Performance (-2, 10): 87.66860232893968 (ACC): cached=false
Performance (-12, 11): 87.72544320521092 (ACC): cached=false
Performance (-11, 11): 87.72544320521092 (ACC): cached=false
Performance (-10, 11): 87.72544320521092 (ACC): cached=false
Performance (-9, 11): 87.72544320521092 (ACC): cached=false
Performance (-8, 11): 87.72544320521092 (ACC): cached=false
Performance (-7, 11): 87.72544320521092 (ACC): cached=false
Performance (-6, 11): 87.72544320521092 (ACC): cached=false
Performance (-5, 11): 87.72544320521092 (ACC): cached=false
Performance (-4, 11): 87.72544320521092 (ACC): cached=false
Performance (-3, 11): 87.72544320521092 (ACC): cached=false
Performance (-2, 11): 87.72544320521092 (ACC): cached=false
Performance (-12, 12): 87.71776200571482 (ACC): cached=false
Performance (-11, 12): 87.71776200571482 (ACC): cached=false
Performance (-10, 12): 87.71776200571482 (ACC): cached=false
Performance (-9, 12): 87.71776200571482 (ACC): cached=false
Performance (-8, 12): 87.71776200571482 (ACC): cached=false
Performance (-7, 12): 87.71776200571482 (ACC): cached=false
Performance (-6, 12): 87.71776200571482 (ACC): cached=false
Performance (-5, 12): 87.71776200571482 (ACC): cached=false
Performance (-4, 12): 87.71776200571482 (ACC): cached=false
Performance (-3, 12): 87.71776200571482 (ACC): cached=false
Performance (-2, 12): 87.71776200571482 (ACC): cached=false
Performance (-12, 13): 87.69471840722647 (ACC): cached=false
Performance (-11, 13): 87.69471840722647 (ACC): cached=false
Performance (-10, 13): 87.69471840722647 (ACC): cached=false
Performance (-9, 13): 87.69471840722647 (ACC): cached=false
Performance (-8, 13): 87.69471840722647 (ACC): cached=false
Performance (-7, 13): 87.69471840722647 (ACC): cached=false
Performance (-6, 13): 87.69471840722647 (ACC): cached=false
Performance (-5, 13): 87.69471840722647 (ACC): cached=false
Performance (-4, 13): 87.69471840722647 (ACC): cached=false
Performance (-3, 13): 87.69471840722647 (ACC): cached=false
Performance (-2, 13): 87.69471840722647 (ACC): cached=false
Performance (-12, 14): 87.70854456631947 (ACC): cached=false
Performance (-11, 14): 87.70854456631947 (ACC): cached=false
Performance (-10, 14): 87.70854456631947 (ACC): cached=false
Performance (-9, 14): 87.70854456631947 (ACC): cached=false
Performance (-8, 14): 87.70854456631947 (ACC): cached=false
Performance (-7, 14): 87.70854456631947 (ACC): cached=false
Performance (-6, 14): 87.70854456631947 (ACC): cached=false
Performance (-5, 14): 87.70854456631947 (ACC): cached=false
Performance (-4, 14): 87.70854456631947 (ACC): cached=false
Performance (-3, 14): 87.70854456631947 (ACC): cached=false
Performance (-2, 14): 87.70854456631947 (ACC): cached=false
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Performance (-12, 15): 87.7162257658156 (ACC): cached=false
Performance (-11, 15): 87.7162257658156 (ACC): cached=false
Performance (-10, 15): 87.7162257658156 (ACC): cached=false
Performance (-9, 15): 87.7162257658156 (ACC): cached=false
Performance (-8, 15): 87.7162257658156 (ACC): cached=false
Performance (-7, 15): 87.7162257658156 (ACC): cached=false
Performance (-6, 15): 87.7162257658156 (ACC): cached=false
Performance (-5, 15): 87.7162257658156 (ACC): cached=false
Performance (-4, 15): 87.7162257658156 (ACC): cached=false
Performance (-3, 15): 87.7162257658156 (ACC): cached=false
Performance (-2, 15): 87.7162257658156 (ACC): cached=false


Correlation coefficient:
2-dimensional space:
 - 1. dimension: classifier.ridge, min: -12.0, max: -2.0, step: 1.0
 - 2. dimension: classifier.maxIts, min: 1.0, max: 15.0, step: 1.0
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Root mean squared error:
2-dimensional space:
 - 1. dimension: classifier.ridge, min: -12.0, max: -2.0, step: 1.0
 - 2. dimension: classifier.maxIts, min: 1.0, max: 15.0, step: 1.0
0.314212549012996
0.31421254901299556
0.3142125490129923
0.31421254901295576
0.31421254901259765
0.3142125490090095
0.3142125489731459
0.31421254861449993
0.31421254502805684
0.3142125091639052
0.3142121505526478
0.31426412800945797
0.3142641280094576
0.3142641280094548
0.31426412800942116
0.31426412800908116
0.31426412800569387
0.3142641279718186
0.3142641276330557
0.3142641242455081
0.31426409037734754
0.3142637524336344
0.31452471601229787
0.3145247160122973
0.31452471601229215
0.31452471601224086
0.31452471601174015
0.31452471600672427
0.3145247159565794
0.31452471545510546
0.31452471044045544
0.31452466030317
0.3145241598534 3674
0.3145416378449 1856
0.3145416378449176
0.3145416378449132
```

0.31454163784486316
0.314541637844371
0.3145416378394378
0.3145416377901418
0.31454163729715784
0.31454163236737304
0.3145415830772434
0.31454109095031946
0.31446971537081947
0.3144697153708192
0.3144697153708149
0.31446971537077384
0.31446971537036
0.3144697153662157
0.314469715324774
0.3144697149103439
0.314469710766097
0.31446966933002285
0.31446925560833744
0.31425735271571825
0.31425735271571803
0.31425735271571564
0.3142573527156851
0.3142573527153897
0.3142573527124291
0.3142573526828191
0.31425735238672214
0.314257349425765
0.3142573198162947
0.31425702373334585
0.3141587098383257
0.31415870983832517
0.3141587098383225
0.3141587098382933
0.31415870983799904
0.31415870983506883
0.3141587098057431
0.31415870951247543
0.3141587065798258
0.3141586772534715
0.3141583840063501
0.3140564274940023
0.31405642749400237
0.31405642749399815
0.3140564274939613
0.3140564274936032
0.3140564274900127
0.3140564274541282
0.31405642709526427
0.3140564235066182
0.3140563876186766
0.3140560285933461
0.3141672102669209
0.3141672102669205
0.31416721026691635
0.3141672102668846

0.3141672102665355
0.31416721026307237
0.31416721022841626
0.3141672098818608
0.3141672064163123
0.3141671717614905
0.31416682527716117
0.3148945351319277
0.3148945351319276
0.3148945351319245
0.31489453513189225
0.314894535131578
0.31489453512843935
0.3148945350970865
0.3148945347835566
0.31489453164824
0.31489450029526167
0.31489418678347425
0.3164196093043525
0.3164196093043521
0.3164196093043491
0.316419609304348
0.3164196093043148
0.31641960930397983
0.31641960930063967
0.31641960926723406
0.31641960893317694
0.3164196055925962
0.3164195721869062
0.3164192381395741
0.3173388364535477
0.3173388364535473
0.317338836453544
0.317338836453506
0.3173388364531445
0.31733883644950944
0.31733883641315846
0.3173388360496337
0.3173388324143876
0.317338796062061
0.31733843254986305
0.3191677020243674s
0.3191677020243672
0.3191677020243631
0.31916770202432615
0.31916770202395295
0.31916770202023037
0.3191677019829999
0.31916770161069047
0.31916769788758687
0.31916766065664487
0.31916728835696384
0.32339440171500755
0.3233944017150071
0.3233944017150037
0.32339440171496
0.32339440171453254

0.3233944017102481
0.3233944016674009
0.3233944012389589
0.3233943969544945
0.3233943541099817
0.3233939256752482
0.3468834025231942
0.34688340252319366
0.34688340252318794
0.34688340252313027
0.3468834025225535
0.3468834025168006
0.3468834024592585
0.3468834018838554
0.3468833961298128
0.3468833385894669
0.3468827631938862

Root relative squared error:
2-dimensional space:
 - 1. dimension: classifier.ridge, min: -12.0, max: -2.0, step: 1.0
 - 2. dimension: classifier.maxIts, min: 1.0, max: 15.0, step: 1.0
77.54390760061368
77.54390760061357
77.54390760061276
77.54390760060375
77.54390760051537
77.54390759962986
77.54390759077914
77.54390750226959
77.54390661717824
77.54389776633359
77.54380926535455
77.55663668144875
77.55663668144865
77.55663668144797
77.55663668143966
77.55663668135574
77.55663668051982
77.55663667215978
77.55663658855715
77.55663575255083
77.55662739429295
77.55654399381723
77.62094669095511
77.62094669095498
77.6209466909537
77.62094669094104
77.62094669081748
77.62094668957961
77.62094667720446
77.62094655344667
77.62094531589089
77.62093294260713

77.62080943758482
77.62512279731781
77.62512279731757
77.62512279731648
77.62512279730413
77.62512279718267
77.62512279596521
77.62512278379957
77.625122662137
77.62512144552494
77.62510928130911
77.62498783025684
77.60737318896045
77.60737318896038
77.60737318895933
77.6073731889492
77.60737318884705
77.6073731878243
77.60737317759698
77.60737307532058
77.60737205256989
77.60736182664125
77.60725972506623
77.5549646198033
77.55496461980326
77.55496461980266
77.55496461979513
77.55496461972223
77.55496461899159
77.5549646116842
77.55496453861099
77.5549638078821
77.55495650061816
77.55488343087954
77.53062073476748
77.53062073476734
77.53062073476669
77.53062073475948
77.53062073468686
77.53062073396372
77.53062072672648
77.53062065435152
77.5306199306086
77.5306126932143
77.53054032332405
77.50537867272284
77.50537867272287
77.50537867272182
77.50537867271272
77.50537867262435
77.50537867173827
77.50537866288239
77.50537857431905
77.50537768868404
77.5053688319683
77.50528022880097

77.53271853910923
77.53271853910914
77.5327185391081
77.53271853910027
77.53271853901411
77.53271853815946
77.53271852960674
77.532718444081
77.53271758882498
77.53270903642849
77.5326235282306
77.7122136366312
77.71221363663118
77.71221363663042
77.71221363662245
77.7122136365449
77.71221363577031
77.71221362803334
77.71221355065737
77.71221277689865
77.71220503935774
77.71212766838974
78.08858374368793
78.08858374368785
78.0885837436871
78.08858374367864
78.08858374359596
78.08858374277166
78.08858373452755
78.08858365208624
78.08858282767078
78.08857458354511
78.08849214464975
78.31543803497922
78.31543803497912
78.3154380349783
78.31543803496893
78.3154380348797
78.31543803398262
78.31543802501163
78.31543793529806
78.31543703816298
78.31542806684229
78.3153383636962
78.76678023401954
78.76678023401946
78.76678023401847
78.76678023400935
78.76678023391725
78.76678023299856
78.76678022381051
78.766780131929
78.76677921311145
78.76677002495924
78.76667814584061
79.80987928049646

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79.80987928049635
79.80987928049551
79.80987928048472
79.80987928037923
79.80987927932186
79.80987926874771
79.80987916301333
79.80987810565864
79.80986753214415
79.80976179956443
85.60668438590118
85.60668438590103
85.60668438589963
85.60668438588539
85.60668438574305
85.60668438432332
85.60668437012261
85.60668422811999
85.60668280809094
85.6066686078202
85.60652660705708
```

```
Mean absolute error:
2-dimensional space:
 - 1. dimension: classifier.ridge, min: -12.0, max: -2.0, step: 1.0
 - 2. dimension: classifier.maxIts, min: 1.0, max: 15.0, step: 1.0
0.15259164044826648
0.15259164044826634
0.15259164044826773
0.15259164044828116
0.1525916404484115
0.15259164044970383
0.1525916404626267
0.15259164059186509
0.1525916418470672
0.15259165485741377
0.15259178904325743
0.1525981899710827
0.15259818997108307
0.15259818997108773
0.1525981899711303
0.15259818997155425
0.15259818997580246
0.15259819001824798
0.15259819044270215
0.15259819468781577
0.15259823719504081
0.152598667909013
0.1527765706958448
0.1527765706958453
0.15277657069584744
0.15277657069587083
0.1527765706960912
0.152776570698290655
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0.1527765707203136
0.1527765709405393
0.15277657314327592
0.15277659522268766
0.1527768212447195
0.15286611112957732
0.1528661111295776
0.15286611112957935
0.15286611112959983
0.15286611112980678
0.15286611113187412
0.1528661111525459
0.1528661113592725
0.15286611342706416
0.15286613415638717
0.1528663466179871
0.15282007730070749
0.15282007730070746
0.15282007730070996
0.15282007730073954
0.15282007730102778
0.1528200773038923
0.1528200773325491
0.1528200776191231
0.1528200804853433
0.15282010919780192
0.152820401369579
0.1526171863732151
0.15261718637321545
0.15261718637322028
0.15261718637326935
0.15261718637375785
0.15261718637863037
0.15261718642736183
0.1526171869146758
0.15261719178780114
0.1526172405189199
0.15261772781509816
0.15168132247098864
0.15168132247098898
0.1516813224709927
0.151681322471027
0.15168132247137353
0.15168132247484525
0.15168132250957475
0.1516813228568546
0.15168132632966982
0.15168136105804653
0.15168170836310466
0.15262552966845763
0.1526255296684579
0.15262552966845877
0.15262552966846915
0.1526255296685836
0.15262552966969195
0.15262552968081342
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0.15262552979201151
0.15262553090392011
0.15262554201064135
0.1526256518444053
0.15301961877273507
0.1530196187727358
0.1530196187727413
0.15301961877279388
0.15301961877332734
0.15301961877864012
0.1530196188317896
0.15301961936329878
0.15301962467835778
0.15301967782928594
0.1530202093719182
0.15284194271695942
0.15284194271695967
0.15284194271696244
0.15284194271699078
0.15284194271726892
0.1528419427200365
0.1528419427477338
0.15284194302469556
0.15284194579430999
0.1528419734905411
0.15284225046013364
0.15257936951470397
0.15257936951470444
0.15257936951471016
0.15257936951476814
0.15257936951533532
0.1525793695210123
0.15257936957780244
0.15257937014567075
0.15257937582435704
0.15257943261122836
0.1525800004781429
0.15433121899725336
0.15433121899725374
0.1543312189972576
0.15433121899729868
0.15433121899771088
0.15433121900184887
0.15433121904321603
0.15433121945688635
0.15433122359360674
0.1543312649608029
0.15433167863373784
0.1535933490847234
0.15359334908472408
0.15359334908472905
0.15359334908478395
0.1535933490853251
0.15359334909077285
0.15359334914524211
0.1535933496899324
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0.15359335513682387
0.1535934096057419
0.15359395429320905
0.1613799816552728
0.16137998165527315
0.16137998165527964
0.16137998165533643
0.16137998165591258
0.1613799816616753
0.16137998171928902
0.16137998229541892
0.16137998805673892
0.16138004566993336
0.16138062180115825
0.2049223613748371
0.20492236137483721
0.2049223613748389
0.20492236137485603
0.2049223613750562
0.20492236137706393
0.204922361397119
0.20492236159768698
0.20492236360335897
0.20492238366006071
0.20492258422774914

Root absolute error:
2-dimensional space:
 - 1. dimension: classifier.ridge, min: -12.0, max: -2.0, step: 1.0
 - 2. dimension: classifier.maxIts, min: 1.0, max: 15.0, step: 1.0
46.46664450229591
46.466644502295864
46.46664450229629
46.46664450230038
46.46664450234007
46.46664450273361
46.46664450666883
46.46664454602403
46.4666449397154
46.46664889011639
46.46668975189542
46.46863893886837
46.46863893886847
46.4686389388699
46.46863893888286
46.46863893901196
46.46863894030561
46.468638953230965
46.46863908248418
46.46864037519055
46.46865331933421
46.46878447876711
46.52295778036973
46.5229587803698 76

46.52295878037052
46.52295878037766
46.52295878044476
46.522958781114525
46.52295878782087
46.5229588548832
46.52295952565243
46.52296624919361
46.52303507659052
46.55022530355939
46.550225303559465
46.55022530356
46.550225303566236
46.550225303629254
46.550225304258795
46.550225310553685
46.55022537350531
46.55022600318161
46.550232315598734
46.55029701362285
46.536207251489884
46.53620725148987
46.53620725149064
46.53620725149964
46.53620725158742
46.53620725245971
46.53620726118617
46.536207348452635
46.53620822126345
46.53621696467564
46.536305935749404
46.474423653300406
46.474423653300505
46.474423653301976
46.47442365331692
46.47442365346567
46.47442365494944
46.47442366978896
46.47442381818402
46.4744253021302
46.47444014155106
46.47458853118902
46.18943782367344
46.189437823673536
46.18943782367467
46.18943782368512
46.18943782379064
46.189437824847836
46.18943783542354
46.18943794117592
46.18943899870482
46.18944957406222
46.18955533411974
46.47696432284739446
46.47696432284747
46.47696432284774

46.4769643228509
46.47696432288574
46.476964323223264
46.476964326609924
46.47696436047266
46.476964699065874
46.47696808124373
46.477001527417116
46.59697088583402
46.59697088583424
46.59697088583592
46.596970885851924
46.596970886014375
46.59697088763221
46.596970903817095
46.5969710656703
46.59697268419251
46.596988869517446
46.59715073292267
46.5428656275378
46.54286562753788
46.54286562753872
46.54286562754735
46.542865627632054
46.54286562847483
46.542865636909106
46.542865721248475
46.542866564641265
46.542874998595586
46.54295934035609
46.4629078027894
46.462907802789545
46.46290780279128
46.46290780280894
46.462907802981654
46.46290780471039
46.46290782200391
46.46290799492908
46.46290972418173
46.46292701671069
46.4630999414526
46.99637455685285
46.99637455685297
46.99637455685414
46.99637455686665
46.99637455699217
46.996374558252256
46.996374570849234
46.99637469681859
46.996375956517454
46.99638855350372
46.99651452366271
46.77168112794844
46.771681127948646
46.77168112795016
46.77168112796688

46.77168112813167
46.77168112979059
46.771681146377375
46.77168131224445
46.77168297091179
46.771699557586146
46.771865423808094
49.14283780771679
49.142837807716894
49.14283780771888
49.142837807736164
49.14283780791162
49.1428378096646
49.142837827210776
49.14283800265173
49.142839757067684
49.14285730122552
49.143032742584786
62.4022029555666
62.402202955566636
62.40220295556714
62.402202955572356
62.40220295563332
62.4022029562447
62.402202962351794
62.40220302342802
62.40220363418788
62.40220974178084
62.40227081791482

Combined = (1-abs(CC)) + RRSE + RAE:
2-dimensional space:
 - 1. dimension: classifier.ridge, min: -12.0, max: -2.0, step: 1.0
 - 2. dimension: classifier.maxIts, min: 1.0, max: 15.0, step: 1.0
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Accuracy:
2-dimensional space:
 - 1. dimension: classifier.ridge, min: -12.0, max: -2.0, step: 1.0
 - 2. dimension: classifier.maxIts, min: 1.0, max: 15.0, step: 1.0
87.72544320521092
87.72544320521092
87.72544320521092
87.72544320521092
87.72544320521092
87.72544320521092
87.72544320521092
87.72544320521092
87.72544320521092
87.72544320521092
87.72544320521092
87.71776200571482
87.71776200571482
87.71776200571482
87.71776200571482
87.71776200571482

87.71776200571482
87.71776200571482
87.71776200571482
87.71776200571482
87.71776200571482
87.71776200571482
87.7162257658156
87.7162257658156
87.7162257658156
87.7162257658156
87.7162257658156
87.7162257658156
87.7162257658156
87.7162257658156
87.7162257658156
87.7162257658156
87.70854456631947
87.70854456631947
87.70854456631947
87.70854456631947
87.70854456631947
87.70854456631947
87.70854456631947
87.70854456631947
87.70854456631947
87.70854456631947
87.69471840722647
87.69471840722647
87.69471840722647
87.69471840722647
87.69471840722647
87.69471840722647
87.69471840722647
87.69471840722647
87.69471840722647
87.69471840722647
87.68703720773036
87.68703720773036
87.68703720773036
87.68703720773036
87.68703720773036
87.68703720773036
87.68703720773036
87.68703720773036
87.68703720773036
87.68703720773036
87.68550096783113
87.68550096783113
87.68550096783113
87.68550096783113
87.68550096783113
87.68550096783113

87.68550096783113
87.68550096783113
87.68550096783113
87.68550096783113
87.68550096783113
87.66860232893968
87.66860232893968
87.66860232893968
87.66860232893968
87.66860232893968
87.66860232893968
87.66860232893968
87.66860232893968
87.66860232893968
87.66860232893968
87.65631240974591
87.65631240974591
87.65631240974591
87.65631240974591
87.65631240974591
87.65631240974591
87.65631240974591
87.65631240974591
87.65631240974591
87.65631240974591
87.58564537438167
87.58564537438167
87.58564537438167
87.58564537438167
87.58564537438167
87.58564537438167
87.58564537438167
87.58564537438167
87.58564537438167
87.58564537438167
87.50883337942054
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87.50883337942054
87.48886226073064
87.48886226073064
87.48886226073064
87.48886226073064
87.48886226073064
87.48886226073064

87.48886226073064
87.48886226073064
87.48886226073064
87.48886226073064
87.4596737026454
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87.4596737026454
87.4596737026454
87.4596737026454
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87.4596737026454
87.4596737026454
87.08943988693274
87.08943988693274
87.08943988693274
87.08943988693274
87.08943988693274
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87.08943988693274
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87.08943988693274
87.08943988693274
87.08943988693274
84.3411067072234
84.3411067072234
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84.3411067072234
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84.3411067072234
84.3411067072234

Kappa:
2-dimensional space:
 - 1. dimension: classifier.ridge, min: -12.0, max: -2.0, step: 1.0
 - 2. dimension: classifier.maxIts, min: 1.0, max: 15.0, step: 1.0
0.5913834999767961
0.5913834999767961
0.5913834999767961
0.5913834999767961
0.5913834999767961
0.5913834999767961
0.5913834999767961
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0.5913834999767961
0.5913834999767961
0.5913834999767961
0.5915805585562471

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0.5915805585562471
0.5915805585562471
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0.5915805585562471
0.5915805585562471
0.5924199413549811
0.5924199413549811
0.5924199413549811
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0.5924199413549811
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0.5924199413549811
0.5928823852973569
0.5928823852973569
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0.5928823852973569
0.5916819321866639
0.5916819321866639
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0.5916819321866639
0.5916343801834689
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0.5905445499627987
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0.5908352187188214
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0.5888852512927994
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0.5876343861519895
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0.5822482302905247
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0.5783470072618521
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0.5482732062900055
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Best performance:
Performance (-2, 1): 84.3411067072234 (ACC)

Result of Step 1: -12, 11

=== Initial space - End ===

Center is on border of space.

Final result:-12, 11
Classifier: weka.classifiers.functions.Logistic -R 1.0E-12 -M 11
Shutting down thread pool...
```

```
Shutting down thread pool...
Starting thread pool with 1 slots...

weka.classifiers.meta.MultiSearch
=================================
Options: -E ACC -search "weka.core.setupgenerator.MathParameter -property classifier.ridge
-min -12.0 -max -2.0 -step 1.0 -base 10.0 -expression pow(BASE,I)" -search
"weka.core.setupgenerator.MathParameter -property classifier.maxIts -min 1.0 -max 15.0 -step
1.0 -base 10.0 -expression I" -sample-size 100.0 -log-file C:\Users\Su\Desktop\log.txt
-initial-folds 10 -subsequent-folds 10 -num-slots 1 -S 1 -W
weka.classifiers.functions.Logistic -- -R 1.0E-8 -M -1

Step 1:


=== Initial space - Start ===
Determining best values with 10-fold CV in space:
2-dimensional space:
 - 1. dimension: classifier.ridge, min: -12.0, max: -2.0, step: 1.0
 - 2. dimension: classifier.maxIts, min: 1.0, max: 15.0, step: 1.0

Performance (-12, 1): 84.28887455064982 (ACC): cached=false
Performance (-11, 1): 84.28887455064982 (ACC): cached=false
Performance (-10, 1): 84.28887455064982 (ACC): cached=false
Performance (-9, 1): 84.28887455064982 (ACC): cached=false
Performance (-8, 1): 84.28887455064982 (ACC): cached=false
Performance (-7, 1): 84.28887455064982 (ACC): cached=false
Performance (-6, 1): 84.28887455064982 (ACC): cached=false
Performance (-5, 1): 84.28887455064982 (ACC): cached=false
Performance (-4, 1): 84.28887455064982 (ACC): cached=false
Performance (-3, 1): 84.28887455064982 (ACC): cached=false
Performance (-2, 1): 84.28887455064982 (ACC): cached=false
Performance (-12, 2): 87.03106277076228 (ACC): cached=false
Performance (-11, 2): 87.03106277076228 (ACC): cached=false
Performance (-10, 2): 87.03106277076228 (ACC): cached=false
Performance (-9, 2): 87.03106277076228 (ACC): cached=false
Performance (-8, 2): 87.03106277076228 (ACC): cached=false
Performance (-7, 2): 87.03106277076228 (ACC): cached=false
Performance (-6, 2): 87.03106277076228 (ACC): cached=false
Performance (-5, 2): 87.03106277076228 (ACC): cached=false
Performance (-4, 2): 87.03106277076228 (ACC): cached=false
Performance (-3, 2): 87.03106277076228 (ACC): cached=false
Performance (-2, 2): 87.03106277076228 (ACC): cached=false
Performance (-12, 3): 87.35213690969982 (ACC): cached=false
Performance (-11, 3): 87.35213690969982 (ACC): cached=false
Performance (-10, 3): 87.35213690969982 (ACC): cached=false
Performance (-9, 3): 87.35213690969982 (ACC): cached=false
Performance (-8, 3): 87.35213690969982 (ACC): cached=false
Performance (-7, 3): 87.35213690969982 (ACC): cached=false
Performance (-6, 3): 87.35213690969982 (ACC): cached=false
Performance (-5, 3): 87.35213690969982 (ACC): cached=false
Performance (-4, 3): 87.35213690969982 (ACC): cached=false
Performance (-3, 3): 87.35213690969982 (ACC): cached=false
Performance (-2, 3): 87.35213690969982 (ACC): cached=false
Performance (-12, 4): 87.41665898546717 (ACC): cached=false
Performance (-11, 4): 87.41665898546717 (ACC): cached=false
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Performance (-10, 4): 87.41665898546717 (ACC): cached=false
Performance (-9, 4): 87.41665898546717 (ACC): cached=false
Performance (-8, 4): 87.41665898546717 (ACC): cached=false
Performance (-7, 4): 87.41665898546717 (ACC): cached=false
Performance (-6, 4): 87.41665898546717 (ACC): cached=false
Performance (-5, 4): 87.41665898546717 (ACC): cached=false
Performance (-4, 4): 87.41665898546717 (ACC): cached=false
Performance (-3, 4): 87.41665898546717 (ACC): cached=false
Performance (-2, 4): 87.41665898546717 (ACC): cached=false
Performance (-12, 5): 87.45045626325008 (ACC): cached=false
Performance (-11, 5): 87.45045626325008 (ACC): cached=false
Performance (-10, 5): 87.45045626325008 (ACC): cached=false
Performance (-9, 5): 87.45045626325008 (ACC): cached=false
Performance (-8, 5): 87.45045626325008 (ACC): cached=false
Performance (-7, 5): 87.45045626325008 (ACC): cached=false
Performance (-6, 5): 87.45045626325008 (ACC): cached=false
Performance (-5, 5): 87.45045626325008 (ACC): cached=false
Performance (-4, 5): 87.45045626325008 (ACC): cached=false
Performance (-3, 5): 87.45045626325008 (ACC): cached=false
Performance (-2, 5): 87.45045626325008 (ACC): cached=false
Performance (-12, 6): 87.4996159400252 (ACC): cached=false
Performance (-11, 6): 87.4996159400252 (ACC): cached=false
Performance (-10, 6): 87.4996159400252 (ACC): cached=false
Performance (-9, 6): 87.4996159400252 (ACC): cached=false
Performance (-8, 6): 87.4996159400252 (ACC): cached=false
Performance (-7, 6): 87.4996159400252 (ACC): cached=false
Performance (-6, 6): 87.4996159400252 (ACC): cached=false
Performance (-5, 6): 87.4996159400252 (ACC): cached=false
Performance (-4, 6): 87.4996159400252 (ACC): cached=false
Performance (-3, 6): 87.4996159400252 (ACC): cached=false
Performance (-2, 6): 87.4996159400252 (ACC): cached=false
Performance (-12, 7): 87.59025409407933 (ACC): cached=false
Performance (-11, 7): 87.59025409407933 (ACC): cached=false
Performance (-10, 7): 87.59025409407933 (ACC): cached=false
Performance (-9, 7): 87.59025409407933 (ACC): cached=false
Performance (-8, 7): 87.59025409407933 (ACC): cached=false
Performance (-7, 7): 87.59025409407933 (ACC): cached=false
Performance (-6, 7): 87.59025409407933 (ACC): cached=false
Performance (-5, 7): 87.59025409407933 (ACC): cached=false
Performance (-4, 7): 87.59025409407933 (ACC): cached=false
Performance (-3, 7): 87.59025409407933 (ACC): cached=false
Performance (-2, 7): 87.59025409407933 (ACC): cached=false
Performance (-12, 8): 87.55799305619566 (ACC): cached=false
Performance (-11, 8): 87.55799305619566 (ACC): cached=false
Performance (-10, 8): 87.55799305619566 (ACC): cached=false
Performance (-9, 8): 87.55799305619566 (ACC): cached=false
Performance (-8, 8): 87.55799305619566 (ACC): cached=false
Performance (-7, 8): 87.55799305619566 (ACC): cached=false
Performance (-6, 8): 87.55799305619566 (ACC): cached=false
Performance (-5, 8): 87.55799305619566 (ACC): cached=false
Performance (-4, 8): 87.55799305619566 (ACC): cached=false
Performance (-3, 8): 87.55799305619566 (ACC): cached=false
Performance (-2, 8): 87.55799305619566 (ACC): cached=false
Performance (-12, 9): 87.55031185669954 (ACC): cached=false
Performance (-11, 9): 87.55031185669954 (ACC): cached=false
Performance (-10, 9): 87.55031185669954 (ACC): cached=false
```

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Performance (-9, 9): 87.55031185669954 (ACC): cached=false
Performance (-8, 9): 87.55031185669954 (ACC): cached=false
Performance (-7, 9): 87.55031185669954 (ACC): cached=false
Performance (-6, 9): 87.55031185669954 (ACC): cached=false
Performance (-5, 9): 87.55031185669954 (ACC): cached=false
Performance (-4, 9): 87.55031185669954 (ACC): cached=false
Performance (-3, 9): 87.55031185669954 (ACC): cached=false
Performance (-2, 9): 87.55184809659876 (ACC): cached=false
Performance (-12, 10): 87.58257289458322 (ACC): cached=false
Performance (-11, 10): 87.58257289458322 (ACC): cached=false
Performance (-10, 10): 87.58257289458322 (ACC): cached=false
Performance (-9, 10): 87.58257289458322 (ACC): cached=false
Performance (-8, 10): 87.58257289458322 (ACC): cached=false
Performance (-7, 10): 87.58257289458322 (ACC): cached=false
Performance (-6, 10): 87.58257289458322 (ACC): cached=false
Performance (-5, 10): 87.58257289458322 (ACC): cached=false
Performance (-4, 10): 87.58257289458322 (ACC): cached=false
Performance (-3, 10): 87.58257289458322 (ACC): cached=false
Performance (-2, 10): 87.58257289458322 (ACC): cached=false
Performance (-12, 11): 87.57642793498633 (ACC): cached=false
Performance (-11, 11): 87.57642793498633 (ACC): cached=false
Performance (-10, 11): 87.57642793498633 (ACC): cached=false
Performance (-9, 11): 87.57642793498633 (ACC): cached=false
Performance (-8, 11): 87.57642793498633 (ACC): cached=false
Performance (-7, 11): 87.57642793498633 (ACC): cached=false
Performance (-6, 11): 87.57642793498633 (ACC): cached=false
Performance (-5, 11): 87.57642793498633 (ACC): cached=false
Performance (-4, 11): 87.57642793498633 (ACC): cached=false
Performance (-3, 11): 87.57642793498633 (ACC): cached=false
Performance (-2, 11): 87.57642793498633 (ACC): cached=false
Performance (-12, 12): 87.56721049559098 (ACC): cached=false
Performance (-11, 12): 87.56721049559098 (ACC): cached=false
Performance (-10, 12): 87.56721049559098 (ACC): cached=false
Performance (-9, 12): 87.56721049559098 (ACC): cached=false
Performance (-8, 12): 87.56721049559098 (ACC): cached=false
Performance (-7, 12): 87.56721049559098 (ACC): cached=false
Performance (-6, 12): 87.56721049559098 (ACC): cached=false
Performance (-5, 12): 87.56721049559098 (ACC): cached=false
Performance (-4, 12): 87.56721049559098 (ACC): cached=false
Performance (-3, 12): 87.56721049559098 (ACC): cached=false
Performance (-2, 12): 87.56874673549021 (ACC): cached=false
Performance (-12, 13): 87.54877561680031 (ACC): cached=false
Performance (-11, 13): 87.54877561680031 (ACC): cached=false
Performance (-10, 13): 87.54877561680031 (ACC): cached=false
Performance (-9, 13): 87.54877561680031 (ACC): cached=false
Performance (-8, 13): 87.54877561680031 (ACC): cached=false
Performance (-7, 13): 87.54877561680031 (ACC): cached=false
Performance (-6, 13): 87.54877561680031 (ACC): cached=false
Performance (-5, 13): 87.54877561680031 (ACC): cached=false
Performance (-4, 13): 87.54877561680031 (ACC): cached=false
Performance (-3, 13): 87.54877561680031 (ACC): cached=false
Performance (-2, 13): 87.54877561680031 (ACC): cached=false
Performance (-12, 14): 87.52726825821121 (ACC): cached=false
Performance (-11, 14): 87.52726825821121 (ACC): cached=false
Performance (-10, 14): 87.52726825821121 (ACC): cached=false
Performance (-9, 14): 87.52726825821121 (ACC): cached=false
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Performance (-8, 14): 87.52726825821121 (ACC): cached=false
Performance (-7, 14): 87.52726825821121 (ACC): cached=false
Performance (-6, 14): 87.52726825821121 (ACC): cached=false
Performance (-5, 14): 87.52726825821121 (ACC): cached=false
Performance (-4, 14): 87.52726825821121 (ACC): cached=false
Performance (-3, 14): 87.52726825821121 (ACC): cached=false
Performance (-2, 14): 87.52726825821121 (ACC): cached=false
Performance (-12, 15): 87.51958705871509 (ACC): cached=false
Performance (-11, 15): 87.51958705871509 (ACC): cached=false
Performance (-10, 15): 87.51958705871509 (ACC): cached=false
Performance (-9, 15): 87.51958705871509 (ACC): cached=false
Performance (-8, 15): 87.51958705871509 (ACC): cached=false
Performance (-7, 15): 87.51958705871509 (ACC): cached=false
Performance (-6, 15): 87.51958705871509 (ACC): cached=false
Performance (-5, 15): 87.51958705871509 (ACC): cached=false
Performance (-4, 15): 87.51958705871509 (ACC): cached=false
Performance (-3, 15): 87.51958705871509 (ACC): cached=false
Performance (-2, 15): 87.51958705871509 (ACC): cached=false


Correlation coefficient:
2-dimensional space:
 - 1. dimension: classifier.ridge, min: -12.0, max: -2.0, step: 1.0
 - 2. dimension: classifier.maxIts, min: 1.0, max: 15.0, step: 1.0
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Root mean squared error:
2-dimensional space:
 - 1. dimension: classifier.ridge, min: -12.0, max: -2.0, step: 1.0
 - 2. dimension: classifier.maxIts, min: 1.0, max: 15.0, step: 1.0
0.315219070071703
0.31521907007170274
0.3152190700716996
0.31521907007167166
0.31521907007139016
0.3152190700685847
0.31521907004051236
0.315219069759792
0.3152190669525914
0.31521903888070235
0.31521875817458284
0.3150573731965267
0.3150573731965266
0.3150573731965232
0.31505737319649174
0.3150573731961701
0.31505737319296667
0.315057373160924
0.3150573728405021
0.31505736963627906
0.3150573375943149
0.3150570172028476
0.31503157961647743
0.31503157961647704
0.3150315796164739
0.3150315796164406
0.31503157961610784
0.3150315796127781
0.315031579579482

```
0.3150315792465275
0.3150315759169928
0.31503154262185123
0.31503120969306303
0.3150682570817803
0.31506866626148217
0.3150686662614817
0.31506866626147834
0.3150686662614417
0.3150686662610732
0.31506866625739105
0.3150686662205604
0.315068665852267
0.3150686621693358
0.315068625340339
0.3151210349247566
0.3151210349247565
0.3151210349247537
0.3151210349247261
0.31512103492445415
0.31512103492173155
0.31512103489450927
0.31512103462229
0.3151210319000956
0.31512100467831106
0.31512073247500494
0.3151849966442207
0.3151853324066867
0.31518533240668634
0.31518533240668345
0.31518533240665225
0.31518533240635005
0.3151853324033292
0.3151853323731 0853
0.3151853320709086
0.3151853290488966
0.31518529882893515
0.31527058256277896
0.31527058256277823
0.31527058256277374
0.3152705825627302
0.3152705825622981
0.315270582557981
0.31527058251480206
0.31527058208302144
0.3152705777652006
0.31527053458746895
0.3152701028558883
0.3152803967546486
0.31528039675464803
0.31528039675464314
0.3152803967545964
0.31528039675413566
0.31528039674952124
0.31528039670337654
0.3152803962419289
```

```
0.3152803916274548
0.3152803454832888
0.315279884097129
0.3152836992406387
0.31528369924063804
0.31528369924063343
0.3152836992405834
0.3152836992400994
0.315283699235236
0.31528369918661264
0.315283698700382
0.31528369383810095
0.31528364521593916
0.3152831590594429
0.3158469694626864
0.315846969462686614
0.31584696946268326
0.315846969462656
0.3158469694623853
0.31584696945967333
0.3158469694325743
0.3158469691615785
0.3158469664516239
0.31584693935221836
0.3158466683721368
0.31719105797167185
0.3171910579716716
0.3171910579716685
0.31719105797163544
0.31719105797130975
0.31719105796804087
0.31719105793534796
0.3171910576084497
0.3171910543394614 3
0.31719102164966506
0.3171906947603672
0.31799888702555645
0.317998887025556
0.31799888702555296
0.31799888702551854
0.31799888702517676
0.31799888702176893
0.31799888698769624
0.3179988866469538
0.31799888323954834
0.31799884916557514
0.3179985084358788 5
0.3198480272978998
0.31984802729789963
0.3198480272978958
0.319848027297861
0.31984802729750444
0.31984802729395395
0.3198480272584471 3
0.3198480269033824
0.3198480233527315
```

```
0.3198479878462888
0.3198476327907699
0.3238266511415503
0.3238266511415499
0.3238266511415464
0.32382665114150694
0.32382665114110376
0.32382665113707865
0.323826651096834
0.32382665069437666
0.32382664666982475
0.3238266064243872
0.3238262039798184
0.34720315928478085
0.34720315928478035
0.3472031592847752
0.34720315928471884
0.3472031592841607
0.34720315927856454
0.34720315922261724
0.34720315866315127
0.347203153068492
0.3472030971219841
0.34720253766458975
```

```
Root relative squared error:
2-dimensional space:
 - 1. dimension: classifier.ridge, min: -12.0, max: -2.0, step: 1.0
 - 2. dimension: classifier.maxIts, min: 1.0, max: 15.0, step: 1.0
77.79017312393995
77.79017312393988
77.7901731239391
77.7901731239322
77.79017312386274
77.7901731231704
77.79017311624268
77.79017304696615
77.79017235420152
77.79016542658414
77.79009615356196
77.75026935824867
77.75026935824864
77.7502693582478
77.75026935824005
77.75026935816066
77.75026935737012
77.7502693494626
77.75026927038846
77.75026847964611
77.75026057228843
77.75018150566437
77.74390398493207
77.74390398493198
77.7439039849312
```

77.74390398492298
77.74390398484086
77.74390398401914
77.7439039758023
77.74390389363535
77.74390307196843
77.74389485534998
77.74381269474952
77.75295529764297
77.75305627554332
77.75305627554322
77.75305627554236
77.75305627553332
77.75305627544239
77.7530562745337
77.7530562654446
77.75305617455666
77.7530552656781
77.75304617697026
77.76597988254927
77.76597988254925
77.76597988254855
77.76597988254173
77.76597988247462
77.76597988180274
77.76597987508478
77.76597980790618
77.76597913611948
77.765972418292
77.76590524360519
77.7817644390778
77.78184729897696
77.78184729897687
77.78184729897615
77.78184729896844
77.78184729889388
77.78184729814838
77.78184729069048
77.78184721611319
77.78184647033713
77.78183901261563
77.8028854436544
77.80288544365422
77.80288544365311
77.80288544364238
77.80288544353574
77.80288544247037
77.8028854318146
77.80288532525921
77.80288425970177
77.80287360424485
77.80276706096244
77.80530740272063
77.80530740027205
77.80530740027193
77.80530740270777

77.80530740259405
77.80530740145531
77.80530739006765
77.805307276191
77.80530613742506
77.80529474990762
77.80518088842949
77.80612239451936
77.80612239451919
77.80612239451807
77.80612239450572
77.80612239438628
77.80612239318609
77.80612238118674
77.8061222611941
77.80612106127406
77.80610906223356
77.80598908789952
77.94512695435988
77.94512695435981
77.9451269543591
77.94512695435238
77.94512695428556
77.9451269536163
77.94512694692875
77.94512688005207
77.94512621128594
77.9451195236593
77.94505265084145
78.27682286915365
78.27682286915358
78.27682286915282
78.27682286914465
78.27682286906429
78.27682286825758
78.27682286018958
78.2768227795172
78.27682197279202
78.27681390556145
78.2767332353943
78.47617997639318
78.47617997639307
78.47617997639232
78.47617997638382
78.47617997629948
78.47617997545849
78.47617996704999
78.47617988296112
78.47617904207716
78.47617063325762
78.4760865475389
78.9325132238814
78.93251322388136
78.93251322388042
78.93251322387184
78.93251322378384

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78.93251322290764
78.93251321414522
78.93251312652188
78.93251225028763
78.93250348796141
78.9324158668975
79.91436320371355
79.91436320371345
79.91436320371258
79.91436320370285
79.91436320360334
79.91436320261003
79.91436319267841
79.91436309335944
79.9143621001753
79.91435216835373
79.9142528525583
85.68324836374353
85.6832483637434
85.68324836374212
85.68324836372821
85.68324836359048
85.68324836220945
85.68324834840271
85.68324821033696
85.68324682967965
85.68323302312749
85.68309495950223




Mean absolute error:
2-dimensional space:
 - 1. dimension: classifier.ridge, min: -12.0, max: -2.0, step: 1.0
 - 2. dimension: classifier.maxIts, min: 1.0, max: 15.0, step: 1.0
0.15454828687668942
0.15454828687668978
0.15454828687669434
0.15454828687673855
0.15454828687717936
0.1545482868815997
0.15454828692578024
0.15454828736761547
0.15454829178595267
0.15454833596917242
0.15454877778759654
0.15458091337353194
0.15458091337353264
0.1545809133735369
0.1545809133735808
0.15458091337401939
0.15458091337841973
0.15458091342238267
0.15458091386203252
0.15458091825851794
0.15458096222333256
```

```
0.15458140186556135
0.15458168344965698
0.15458168344965753
0.15458168344966194
0.1545816834497022
0.15458168345010234
0.154581683454129
0.15458168349438928
0.15458168389697172
0.15458168792280158
0.15458172818133994
0.1545821307873165
0.1544658817242162
0.15446544153042974
0.15446544153043057
0.1544654415304342
0.15446544153047434
0.15446544153086927
0.15446544153483016
0.1544654415744499
0.154465441970611
0.1544654459322498
0.15446548554877443
0.15335889166068972
0.15335889166069
0.1533588916606935
0.15335889166073594
0.1533588916611587
0.15335889166539293
0.15335889170771388
0.15335889213094459
0.15335889636324437
0.15335893868631226
0.15335936192604796
0.15509497684544307
0.15509445702280897
0.15509445702280938
0.15509445702281344
0.15509445702286284
0.15509445702332927
0.15509445702800825
0.15509445707479272
0.15509445754263898
0.1550944622210845
0.1550945090055268
0.15475077468178167
0.15475077468178197
0.1547507746817854
0.1547507746818177
0.15475077468214168
0.15475077468539827
0.154750774717947
0.15475077504344958
0.15475077829846995
0.15475081084896053
0.15475113638102195
```

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0.1546960987150281
0.15469609871502848
0.1546960987150321
0.15469609871506168
0.15469609871535336
0.15469609871828166
0.1546960987475553
0.15469609904026455
0.15469610196738445
0.15469613123897824
0.15469642399322553
0.15469238573426866
0.15469238573426922
0.15469238573427233
0.15469238573430166
0.1546923857345859
0.15469238573746108
0.15469238576618977
0.15469238605347643
0.1546923889263696
0.15469241765574743
0.1546927049944726
0.15453226360059408
0.15453226360059424
0.1545322636005976
0.15453226360063005
0.15453226360095557
0.15453226360424485
0.15453226363710945
0.15453226396575578
0.15453226725222938
0.1545323001170579
0.15453262877205834
0.15488301347829103
0.1548830134782915
0.15488301347829714
0.15488301347835504
0.15488301347893987
0.15488301348477362
0.15488301354314987
0.154883014126888
0.15488301996427709
0.1548830783381374
0.15488366207451112
0.1561187311474725
0.15611873114747277
0.15611873114747682
0.15611873114751934
0.15611873114795594
0.15611873115235347
0.1561187311963403
0.15611873163614517
0.15611873603420898
0.1561187800148421
0.15611921982112223
0.15578003383109032
```

0.15578003383109093
0.15578003383109612
0.15578003383115122
0.15578003383171452
0.1557800338373179
0.15578003389335265
0.1557800344536
9504
0.15578004005712737
0.155780096091427
0.15578065643202568
0.16333314249624875
0.16333314249624917
0.1633331424962548
0.16333314249631234
0.1633331424968952
0.1633331425027383
0.16333314256118062
0.16333314314559208
0.16333314898967546
0.16333320743050306
0.16333379183763744
0.20636117484135016
0.20636117484135044
0.206361174841353
0.2063611748413722
0.20636117484158054
0.2063611748436505
0.20636117486435046
0.2063611750713684
0.20636117714152638
0.20636119784309806
0.2063614048593201

Root absolute error:
2-dimensional space:
 - 1. dimension: classifier.ridge, min: -12.0, max: -2.0, step: 1.0
 - 2. dimension: classifier.maxIts, min: 1.0, max: 15.0, step: 1.0
47.05989591462298
47.059895914623084
47.05989591462447
47.059895914637934
47.05989591477216
47.05989591611808
47.05989592957111
47.05989606410977
47.05989740949181
47.0599108632658
47.06004539681174
47.06983067078558
47.069830670785784
47.06983067078709
47.06983067080045
47.069830670934
47.06983067227391

47.069830685660605
47.06983081953382
47.069832158261995
47.06984554553171
47.06997941642698
47.07006515867944
47.07006515867961
47.07006515868096
47.07006515869321
47.070065158815055
47.070065160041175
47.07006517230042
47.07006529488662
47.070066520750316
47.07007877946028
47.07020137283051
47.03480357632153
47.03466953747716
47.034669537477406
47.034669537478514
47.034669537490736
47.034669537610995
47.034669538817084
47.03466955088128
47.034669671512184
47.03467087782973
47.03468294104675
46.69772551340102
46.6977255134011
46.69772551340217
46.697725513415094
46.69772551354383
46.697725514833145
46.69772552771986
46.697725656593455
46.69772694532716
46.697739832685606
46.69786870902782
47.22636280692598
47.22620452112709
47.226204521127215
47.22620452112845
47.226204521143494
47.226204521285524
47.22620452271027
47.22620453695612
47.22620467941514
47.226206104000056
47.22622034984535
47.12155337601706
47.121553376017154
47.121553376018205
47.12155337602803
47.121553376126684
47.12155337711832
47.12155338702939

47.12155348614481
47.1215544772973
47.12156438890958
47.12166351330113
47.104904564461435
47.104904564461556
47.10490456446266
47.10490456447167
47.104904564560485
47.104904565452145
47.10490457436596
47.104904663495816
47.10490555480274
47.10491446799217
47.10500361155166
47.103773963200155
47.10377396320032
47.10377396320127
47.1037739632102
47.10377396329676
47.10377396417224
47.10377397292012
47.1037740603988
47.103774935193705
47.10378368327858
47.103871177813595
47.055016833007144
47.055016833007194
47.05501683300822
47.055016833018094
47.055016833117215
47.0550168341188
47.05501684412606
47.05501694419875
47.055017944928736
47.05502795225681
47.05512802758229
47.16182004040637
47.16182004040651
47.16182004040822
47.16182004042586
47.161820040603935
47.16182004238031
47.16182006015586
47.16182023790391
47.161822015386704
47.16183979020548
47.16201753771433
47.53809561140599
47.53809561140607
47.53809561140731
47.53809561142025
47.538095611553196
47.53809561289225
47.538095626286214
47.53809576020664

47.53809709941544
47.538110491501875
47.538244412350714
47.43496240444767
47.43496240444786
47.434962404449436
47.43496240446621
47.43496240463774
47.43496240634397
47.43496242340653
47.43496259403058
47.43496430027364
47.43498136269705
47.4351519862011
49.73488118580432
49.73488118580444
49.73488118580616
49.734881185823674
49.73488118600117
49.73488118778038
49.734881205576045
49.734881383529114
49.73488316305034
49.73490095826062
49.73507891001584
62.836901043113514
62.8369010431136
62.83690104311438
62.83690104312022
62.83690104318366
62.83690104381396
62.8369010501171
62.83690111315398
62.83690174351632
62.8369080471372
62.83697108349987

Combined = (1-abs(CC)) + RRSE + RAE:
2-dimensional space:
 - 1. dimension: classifier.ridge, min: -12.0, max: -2.0, step: 1.0
 - 2. dimension: classifier.maxIts, min: 1.0, max: 15.0, step: 1.0
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Accuracy:
2-dimensional space:
 - 1. dimension: classifier.ridge, min: -12.0, max: -2.0, step: 1.0
 - 2. dimension: classifier.maxIts, min: 1.0, max: 15.0, step: 1.0
87.59025409407933
87.59025409407933
87.59025409407933
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87.59025409407933
87.59025409407933
87.58257289458322
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87.58257289458322
87.57642793498633
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87.57642793498633
87.57642793498633
87.57642793498633
87.57642793498633
87.57642793498633
87.57642793498633
87.57642793498633
87.57642793498633
87.56874673549021
87.56721049559098
87.56721049559098
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87.55799305619566
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87.55799305619566
87.55799305619566
87.55799305619566
87.55799305619566
87.55799305619566
87.55799305619566
87.55184809659876
87.55031185669954
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87.55031185669954
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87.52726825821121
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87.51958705871509
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87.4996159400252
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87.4996159400252
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87.45045626325008
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87.41665898546717
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87.35213690969982
87.35213690969982
87.35213690969982
87.35213690969982
87.35213690969982
87.35213690969982
87.35213690969982
87.35213690969982
87.35213690969982
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87.03106277076228
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84.28887455064982
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```
Kappa:
2-dimensional space:
 - 1. dimension: classifier.ridge, min: -12.0, max: -2.0, step: 1.0
 - 2. dimension: classifier.maxIts, min: 1.0, max: 15.0, step: 1.0
0.589003012569616
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0.589003012569616
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0.5879503142548149
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0.5870352050259257
0.5869965189062366
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0.5863440573796788
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0.587890732824378
0.5878521537647936
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0.5764171476688994
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```
Best performance:
Performance (-2, 1): 84.28887455064982 (ACC)

Result of Step 1: -12, 7
```

```
=== Initial space - End ===

Center is on border of space.

Final result:-12, 7
Classifier: weka.classifiers.functions.Logistic -R 1.0E-12 -M 7
Shutting down thread pool...
Shutting down thread pool...
Starting thread pool with 1 slots...

weka.classifiers.meta.MultiSearch
=================================
Options: -E ACC -search "weka.core.setupgenerator.MathParameter -property classifier.ridge
-min -12.0 -max -2.0 -step 1.0 -base 10.0 -expression pow(BASE,I)" -search
"weka.core.setupgenerator.MathParameter -property classifier.maxIts -min 1.0 -max 15.0 -step
1.0 -base 10.0 -expression I" -sample-size 100.0 -log-file C:\Users\Su\Desktop\log.txt
-initial-folds 10 -subsequent-folds 10 -num-slots 1 -S 1 -W
weka.classifiers.functions.Logistic -- -R 1.0E-8 -M -1

Step 1:


=== Initial space - Start ===
Determining best values with 10-fold CV in space:
2-dimensional space:
 - 1. dimension: classifier.ridge, min: -12.0, max: -2.0, step: 1.0
 - 2. dimension: classifier.maxIts, min: 1.0, max: 15.0, step: 1.0

Performance (-12, 1): 84.25661351276615 (ACC): cached=false
Performance (-11, 1): 84.25661351276615 (ACC): cached=false
Performance (-10, 1): 84.25661351276615 (ACC): cached=false
Performance (-9, 1): 84.25661351276615 (ACC): cached=false
Performance (-8, 1): 84.25661351276615 (ACC): cached=false
Performance (-7, 1): 84.25661351276615 (ACC): cached=false
Performance (-6, 1): 84.25661351276615 (ACC): cached=false
Performance (-5, 1): 84.25661351276615 (ACC): cached=false
Performance (-4, 1): 84.25661351276615 (ACC): cached=false
Performance (-3, 1): 84.25661351276615 (ACC): cached=false
Performance (-2, 1): 84.25661351276615 (ACC): cached=false
Performance (-12, 2): 86.84671398285556 (ACC): cached=false
Performance (-11, 2): 86.84671398285556 (ACC): cached=false
Performance (-10, 2): 86.84671398285556 (ACC): cached=false
Performance (-9, 2): 86.84671398285556 (ACC): cached=false
Performance (-8, 2): 86.84671398285556 (ACC): cached=false
Performance (-7, 2): 86.84671398285556 (ACC): cached=false
Performance (-6, 2): 86.84671398285556 (ACC): cached=false
Performance (-5, 2): 86.84671398285556 (ACC): cached=false
Performance (-4, 2): 86.84671398285556 (ACC): cached=false
Performance (-3, 2): 86.84671398285556 (ACC): cached=false
Performance (-2, 2): 86.84671398285556 (ACC): cached=false
Performance (-12, 3): 87.34291947030448 (ACC): cached=false
Performance (-11, 3): 87.34291947030448 (ACC): cached=false
Performance (-10, 3): 87.34291947030448 (ACC): cached=false
Performance (-9, 3): 87.34291947030448 (ACC): cached=false
Performance (-8, 3): 87.34291947030448 (ACC): cached=false
Performance (-7, 3): 87.34291947030448 (ACC): cached=false
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Performance (-6, 3): 87.34291947030448 (ACC): cached=false
Performance (-5, 3): 87.34291947030448 (ACC): cached=false
Performance (-4, 3): 87.34291947030448 (ACC): cached=false
Performance (-3, 3): 87.34291947030448 (ACC): cached=false
Performance (-2, 3): 87.34291947030448 (ACC): cached=false
Performance (-12, 4): 87.37364426828894 (ACC): cached=false
Performance (-11, 4): 87.37364426828894 (ACC): cached=false
Performance (-10, 4): 87.37364426828894 (ACC): cached=false
Performance (-9, 4): 87.37364426828894 (ACC): cached=false
Performance (-8, 4): 87.37364426828894 (ACC): cached=false
Performance (-7, 4): 87.37364426828894 (ACC): cached=false
Performance (-6, 4): 87.37364426828894 (ACC): cached=false
Performance (-5, 4): 87.37364426828894 (ACC): cached=false
Performance (-4, 4): 87.37364426828894 (ACC): cached=false
Performance (-3, 4): 87.37364426828894 (ACC): cached=false
Performance (-2, 4): 87.37364426828894 (ACC): cached=false
Performance (-12, 5): 87.43509386425784 (ACC): cached=false
Performance (-11, 5): 87.43509386425784 (ACC): cached=false
Performance (-10, 5): 87.43509386425784 (ACC): cached=false
Performance (-9, 5): 87.43509386425784 (ACC): cached=false
Performance (-8, 5): 87.43509386425784 (ACC): cached=false
Performance (-7, 5): 87.43509386425784 (ACC): cached=false
Performance (-6, 5): 87.43509386425784 (ACC): cached=false
Performance (-5, 5): 87.43509386425784 (ACC): cached=false
Performance (-4, 5): 87.43509386425784 (ACC): cached=false
Performance (-3, 5): 87.43509386425784 (ACC): cached=false
Performance (-2, 5): 87.43509386425784 (ACC): cached=false
Performance (-12, 6): 87.56413801579255 (ACC): cached=false
Performance (-11, 6): 87.56413801579255 (ACC): cached=false
Performance (-10, 6): 87.56413801579255 (ACC): cached=false
Performance (-9, 6): 87.56413801579255 (ACC): cached=false
Performance (-8, 6): 87.56413801579255 (ACC): cached=false
Performance (-7, 6): 87.56413801579255 (ACC): cached=false
Performance (-6, 6): 87.56413801579255 (ACC): cached=false
Performance (-5, 6): 87.56413801579255 (ACC): cached=false
Performance (-4, 6): 87.56413801579255 (ACC): cached=false
Performance (-3, 6): 87.56413801579255 (ACC): cached=false
Performance (-2, 6): 87.56413801579255 (ACC): cached=false
Performance (-12, 7): 87.61944265216457 (ACC): cached=false
Performance (-11, 7): 87.61944265216457 (ACC): cached=false
Performance (-10, 7): 87.61944265216457 (ACC): cached=false
Performance (-9, 7): 87.61944265216457 (ACC): cached=false
Performance (-8, 7): 87.61944265216457 (ACC): cached=false
Performance (-7, 7): 87.61944265216457 (ACC): cached=false
Performance (-6, 7): 87.61944265216457 (ACC): cached=false
Performance (-5, 7): 87.61944265216457 (ACC): cached=false
Performance (-4, 7): 87.61944265216457 (ACC): cached=false
Performance (-3, 7): 87.61944265216457 (ACC): cached=false
Performance (-2, 7): 87.61944265216457 (ACC): cached=false
Performance (-12, 8): 87.57950041478477 (ACC): cached=false
Performance (-11, 8): 87.57950041478477 (ACC): cached=false
Performance (-10, 8): 87.57950041478477 (ACC): cached=false
Performance (-9, 8): 87.57950041478477 (ACC): cached=false
Performance (-8, 8): 87.57950041478477 (ACC): cached=false
Performance (-7, 8): 87.57950041478477 (ACC): cached=false
Performance (-6, 8): 87.57950041478477 (ACC): cached=false
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Performance (-5, 8): 87.57950041478477 (ACC): cached=false
Performance (-4, 8): 87.57950041478477 (ACC): cached=false
Performance (-3, 8): 87.57950041478477 (ACC): cached=false
Performance (-2, 8): 87.57950041478477 (ACC): cached=false
Performance (-12, 9): 87.57796417488555 (ACC): cached=false
Performance (-11, 9): 87.57796417488555 (ACC): cached=false
Performance (-10, 9): 87.57796417488555 (ACC): cached=false
Performance (-9, 9): 87.57796417488555 (ACC): cached=false
Performance (-8, 9): 87.57796417488555 (ACC): cached=false
Performance (-7, 9): 87.57796417488555 (ACC): cached=false
Performance (-6, 9): 87.57796417488555 (ACC): cached=false
Performance (-5, 9): 87.57796417488555 (ACC): cached=false
Performance (-4, 9): 87.57796417488555 (ACC): cached=false
Performance (-3, 9): 87.57796417488555 (ACC): cached=false
Performance (-2, 9): 87.57796417488555 (ACC): cached=false
Performance (-12, 10): 87.5748916950871 (ACC): cached=false
Performance (-11, 10): 87.5748916950871 (ACC): cached=false
Performance (-10, 10): 87.5748916950871 (ACC): cached=false
Performance (-9, 10): 87.5748916950871 (ACC): cached=false
Performance (-8, 10): 87.5748916950871 (ACC): cached=false
Performance (-7, 10): 87.5748916950871 (ACC): cached=false
Performance (-6, 10): 87.5748916950871 (ACC): cached=false
Performance (-5, 10): 87.5748916950871 (ACC): cached=false
Performance (-4, 10): 87.5748916950871 (ACC): cached=false
Performance (-3, 10): 87.5748916950871 (ACC): cached=false
Performance (-2, 10): 87.5748916950871 (ACC): cached=false
Performance (-12, 11): 87.63326881125757 (ACC): cached=false
Performance (-11, 11): 87.63326881125757 (ACC): cached=false
Performance (-10, 11): 87.63326881125757 (ACC): cached=false
Performance (-9, 11): 87.63326881125757 (ACC): cached=false
Performance (-8, 11): 87.63326881125757 (ACC): cached=false
Performance (-7, 11): 87.63326881125757 (ACC): cached=false
Performance (-6, 11): 87.63326881125757 (ACC): cached=false
Performance (-5, 11): 87.63326881125757 (ACC): cached=false
Performance (-4, 11): 87.63326881125757 (ACC): cached=false
Performance (-3, 11): 87.63326881125757 (ACC): cached=false
Performance (-2, 11): 87.63326881125757 (ACC): cached=false
Performance (-12, 12): 87.5748916950871 (ACC): cached=false
Performance (-11, 12): 87.5748916950871 (ACC): cached=false
Performance (-10, 12): 87.5748916950871 (ACC): cached=false
Performance (-9, 12): 87.5748916950871 (ACC): cached=false
Performance (-8, 12): 87.5748916950871 (ACC): cached=false
Performance (-7, 12): 87.5748916950871 (ACC): cached=false
Performance (-6, 12): 87.5748916950871 (ACC): cached=false
Performance (-5, 12): 87.5748916950871 (ACC): cached=false
Performance (-4, 12): 87.5748916950871 (ACC): cached=false
Performance (-3, 12): 87.5748916950871 (ACC): cached=false
Performance (-2, 12): 87.5748916950871 (ACC): cached=false
Performance (-12, 13): 87.55184809659876 (ACC): cached=false
Performance (-11, 13): 87.55184809659876 (ACC): cached=false
Performance (-10, 13): 87.55184809659876 (ACC): cached=false
Performance (-9, 13): 87.55184809659876 (ACC): cached=false
Performance (-8, 13): 87.55184809659876 (ACC): cached=false
Performance (-7, 13): 87.55184809659876 (ACC): cached=false
Performance (-6, 13): 87.55184809659876 (ACC): cached=false
Performance (-5, 13): 87.55184809659876 (ACC): cached=false
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Performance (-4, 13): 87.55184809659876 (ACC): cached=false
Performance (-3, 13): 87.55184809659876 (ACC): cached=false
Performance (-2, 13): 87.55184809659876 (ACC): cached=false
Performance (-12, 14): 87.58564537438167 (ACC): cached=false
Performance (-11, 14): 87.58564537438167 (ACC): cached=false
Performance (-10, 14): 87.58564537438167 (ACC): cached=false
Performance (-9, 14): 87.58564537438167 (ACC): cached=false
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Performance (-7, 14): 87.58564537438167 (ACC): cached=false
Performance (-6, 14): 87.58564537438167 (ACC): cached=false
Performance (-5, 14): 87.58564537438167 (ACC): cached=false
Performance (-4, 14): 87.58564537438167 (ACC): cached=false
Performance (-3, 14): 87.58564537438167 (ACC): cached=false
Performance (-2, 14): 87.58564537438167 (ACC): cached=false
Performance (-12, 15): 87.58718161428088 (ACC): cached=false
Performance (-11, 15): 87.58718161428088 (ACC): cached=false
Performance (-10, 15): 87.58718161428088 (ACC): cached=false
Performance (-9, 15): 87.58718161428088 (ACC): cached=false
Performance (-8, 15): 87.58718161428088 (ACC): cached=false
Performance (-7, 15): 87.58718161428088 (ACC): cached=false
Performance (-6, 15): 87.58718161428088 (ACC): cached=false
Performance (-5, 15): 87.58718161428088 (ACC): cached=false
Performance (-4, 15): 87.58718161428088 (ACC): cached=false
Performance (-3, 15): 87.58718161428088 (ACC): cached=false
Performance (-2, 15): 87.58718161428088 (ACC): cached=false


Correlation coefficient:
2-dimensional space:
 - 1. dimension: classifier.ridge, min: -12.0, max: -2.0, step: 1.0
 - 2. dimension: classifier.maxIts, min: 1.0, max: 15.0, step: 1.0
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Root mean squared error:
2-dimensional space:
 - 1. dimension: classifier.ridge, min: -12.0, max: -2.0, step: 1.0
 - 2. dimension: classifier.maxIts, min: 1.0, max: 15.0, step: 1.0
0.31429864859408824
0.31429864859408807
0.3142986485940847
0.3142986485940547
0.3142986485937491
0.31429864859070944
0.31429864856030687
0.3142986482562757
0.3142986482562757
0.3142986482562757
0.31429864521596207
0.3142983109058013
0.3145149171553747
0.3145149171553748
0.3145149171553722
0.31451491715534263
0.3145149171550422
0.3145149171520321
0.3145149171219553
0.31451491682118804
0.31451491381350105
0.31451488373676667
0.31451458298026874

```
0.3145127349289794
0.31451273492897897
0.3145127349289747
0.3145127349289289
0.3145127349284685
0.31451273492386983
0.31451273487788745
0.31451273441805094
0.31451272981970635
0.31451268383765885
0.3145122241582093
0.31452362478436857
0.3145236247843682
0.31452362478436324
0.3145236247843205
0.31452362478388235
0.3145236247795094
0.31452362473579243
0.31452362429860303
0.3145236199267167
0.3145235762091671
0.3145231391651392
0.31441638968295077
0.31441638968295027
0.31441638968294794
0.3144163896829186
0.31441638968262786
0.31441638967971874
0.3144163896506137
0.3144163893595735
0.3144163864491647
0.3144163573451952
0.314416066319695
0.3144313701338422
0.3144313701338417
0.3144313701338373
0.31443137013380285
0.31443137013346206
0.31443137013003924
0.3144313700958436
0.31443136975386127
0.31443136633403673
0.31443133213582014
0.31443099015651715
0.3143096924314935
0.3143096924314934
0.3143096924314897
0.31430969243145435
0.31430969243111256
0.31430969242769186
0.3143096923934926
0.31430969205149184
0.3143096886314934
0.31430965443175024
0.3143093124574379
0.31435357975804784
```

0.3143535797580473
0.314353579758044
0.31435357975801026
0.31435357975765976
0.314353579754161
0.31435357971914496
0.3143535793690032
0.3143535758675974
0.31435354085464084
0.31435319083556595
0.31504120636173466
0.3150412063617343
0.3150412063617308
0.3150412063616973
0.3150412063613727
0.3150412063580976
0.3150412063253529
0.31504120599793534
0.3150412027237557
0.31504116998212617
0.3150408425832107
0.31457087289906105
0.3145708728990603
0.314570872899056
0.31457087289901514
0.3145708728986024
0.3145708728944616
0.31457087285307217
0.31457087243915466
0.3145708683000009
0.31457082690969335
0.3145704131292624
0.31639797507833706
0.3163979750783366
0.3163979750783331
0.31639797507830014
0.316397975077968
0.31639797507465794
0.3163979750415568
0.3163979747105426
0.31639797140040704
0.31639793829915314
0.31639760729579064
0.3173179404345338
0.31731794043453354
0.31731794043453015
0.31731794043449524
0.31731794043414085
0.3173179404305939
0.3173179403951624
0.3173179400408374
0.31731793649759726
0.3173179010652746
0.3173175467523969
0.31933179079432855
0.31933179079432805

0.31933179079432444
0.3193317907942866
0.3193317907939133
0.31933179079016905
0.3193317907527319
0.3193317903783809
0.3193317866348641
0.3193317491997526
0.31933137485804003
0.3243480120441115
0.3243480120441113
0.3243480120441079
0.32434801204406477
0.3243480120436412
0.3243480120394151
0.32434801199716645
0.324348011574654
0.32434800734955027
0.3243479650986099
0.3243475425995558
0.3472650492270283
0.3472650492270279
0.34726504922702245
0.3472650492269668
0.3472650492264019
0.3472650492207595
0.34726504916434237
0.34726504860015434
0.347265042958
2963
0.34726498653977456
0.3472642236232263

Root relative squared error:
2-dimensional space:
 - 1. dimension: classifier.ridge, min: -12.0, max: -2.0, step: 1.0
 - 2. dimension: classifier.maxIts, min: 1.0, max: 15.0, step: 1.0
77.56303031157947
77.56303031157942
77.56303031157859
77.5630303115712
77.56303031149578
77.56303031074565
77.56303030324285
77.56303022821365
77.56302947792109
77.56302197527029
77.56294697642372
77.61640134912462
77.61640134912464
77.616401349124
77.6164013491167
77.61640134904256
77.61640134829973
77.61640134087733

77.6164012666536
77.61640052441268
77.61639310203695
77.61631888095624
77.6158628164494
77.6158628164493
77.61586281644824
77.61586281643693
77.61586281632331
77.61586281518845
77.61586280384086
77.6158626903618
77.61586155557633
77.61585020806669
77.61573676777276
77.61855022916153
77.61855022916144
77.61855022916022
77.61855022914968
77.61855022904155
77.61855022796239
77.61855021717385
77.61855010928369
77.61854903038386
77.61853824170998
77.6184303874149
77.59208661101064
77.59208661101052
77.59208661100995
77.5920866110027
77.59208661093096
77.59208661021304
77.59208660303045
77.59208653120717
77.5920858129727
77.59207863065716
77.59200681100475
77.59578350621452
77.5957835062144
77.59578350621332
77.59578350620481
77.59578350612071
77.59578350527602
77.59578349683717
77.59578341244233
77.59578256849358
77.5957741290131
77.5956897349148
77.56575572417431
77.5657557241743
77.56575572417339
77.56575572416465
77.5657557240803
77.56575572323614
77.5657557147964
77.565755630397

77.56575478640534
77.56574634654812
77.56566195368141
77.57658629584573
77.57658629584559
77.57658629584479
77.57658629583646
77.57658629574996
77.57658629488654
77.57658628624523
77.5765861998368
77.5765853357553
77.57657669521222
77.57649031704854
77.74627968569447
77.74627968569439
77.74627968569351
77.74627968568525
77.74627968560516
77.74627968479692
77.74627967671613
77.74627959591561
77.74627878790928
77.74627070788725
77.746189911956
77.63021018051178
77.63021018051161
77.63021018051055
77.63021018050046
77.6302101803986
77.63021017937673
77.6302101691626
77.63021006701548
77.63020904554972
77.63019883119566
77.63009671792139
78.08110483865765
78.08110483865754
78.08110483865667
78.08110483864854
78.08110483856657
78.0811048377497
78.08110482958097
78.08110474789285
78.08110393101329
78.08109576224268
78.0810140768013
78.30813508879545
78.3081350887954
78.30813508879456
78.30813508878595
78.30813508869848
78.30813508782316
78.30813507907934
78.30813499163855
78.30813411723312

78.30812537319834
78.30803793540439
78.80511157064292
78.80511570642909
78.80511570642821
78.80511570641886
78.80511570632673
78.80511570540273
78.80511569616394
78.8051156037811
78.80511467995116
78.80510544166553
78.8050130611296
80.043025327062
80.04302532706195
80.0430253270611
80.04302532705046
80.04302532694594
80.04302532590302
80.04302531547684
80.04302521120867
80.04302416853206
80.0430137417899
80.04290947692242
85.69852164440634
85.69852164440623
85.6985216444049
85.69852164439118
85.69852164425176
85.69852164285932
85.69852162893662
85.69852148970556
85.69852009740048
85.69850617436413
85.69836694591692

Mean absolute error:
2-dimensional space:
  - 1. dimension: classifier.ridge, min: -12.0, max: -2.0, step: 1.0
  - 2. dimension: classifier.maxIts, min: 1.0, max: 15.0, step: 1.0
0.1551388220982305
0.1551388220982307
0.15513882209823424
0.1551388220982724
0.15513882209863689
0.1551388221022789
0.15513882213872204
0.15513882250314162
0.15513882614732724
0.15513886258801257
0.1551392268771998
0.1551133317040098
0.15511333170401034
0.1551133317040157

0.15511333170406624
0.15511333170456765
0.1551133317095885
0.1551133317598065
0.1551133322619726
0.15511333728362323
0.15511338749992237
0.15511388963805495
0.1551806207573744
0.15518062075737443
0.1551806207573769
0.15518062075740408
0.1551806207576793
0.15518062076039915
0.1551806207876121
0.1551806210597062
0.1551806237806483
0.15518065098932216
0.15518092300051467
0.15523842278807343
0.15523842278807318
0.15523842278807626
0.1552384227881035
0.15523842278837596
0.15523842279110367
0.1552384228184022
0.15523842309136282
0.15523842582097389
0.15523845311626028
0.15523872598800276
0.15424836832078348
0.15424836832078412
0.15424836832078714
0.15424836832082245
0.1542483683211727
0.15424836832467287
0.15424836835966688
0.15424836870961897
0.15424837220912446
0.1542484072043958
0.15424875717763253
0.15573057910810076
0.15573057910810084
0.15573057910810437
0.15573057910813953
0.15573057910848337
0.15573057911194607
0.15573057914656255
0.15573057949271557
0.1557305829542454
0.15573061756948683
0.1557309637150767
0.1551956336953739
0.15519563369537426
0.15519563369537862
0.15519563369542097

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0.155195633695851
0.15519563370016143
0.15519563374326234
0.15519563417424992
0.15519563848413553
0.15519568158241856
0.15519611250746618
0.15503005282190707
0.15503005282190707
0.1550300528219114
0.15503005282194635
0.15503005282230675
0.15503005282590063
0.15503005286186852
0.15503005322151645
0.1550300568179913
0.15503009278171923
0.15503045231696924
0.15564553018636665
0.15564553018636706
0.15564553018636954
0.15564553018639635
0.1556455301866441
0.1556455301891248
0.15564553021393088
0.15564553046197657
0.15564553294246072
0.15564555774725553
0.1556458057910254
0.1552696125530803
0.15526961255308058
0.15526961255308422
0.15526961255311475
0.15526961255341837
0.15526961255642704
0.15526961258654512
0.15526961288767593
0.155269615898991
0.1552696460112398
0.1552699470425856
0.15489867896802154
0.15489867896802204
0.1548986789680278
0.15489867896808707
0.154898678968702
0.1548986789748105
0.15489867903592755
0.15489867964707596
0.15489868575857862
0.1548987468736141
0.15489935802523522
0.1565135457995887
0.15651354579958926
0.15651354579959265
0.1565135457996366
0.1565135458000617
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0.1565135458043143
0.1565135458468191
0.15651354627187133
0.15651355052240273
0.1565135930277318
0.1565140180816154
0.15627526017591625
0.15627526017591664
0.15627526017592241
0.15627526017597834
0.15627526017653423
0.15627526018207893
0.15627526023755378
0.15627526079229465
0.15627526633970432
0.1562753218137409
0.1562758765518028
0.164992801144206
0.16499280114420636
0.1649928011442115
0.16499280114426895
0.16499280114482695
0.16499280115040707
0.16499280120618945
0.16499280176403983
0.16499280734253752
0.1649928631274838
0.16499342097627107
0.20638619300543712
0.20638619300543723
0.20638619300543934
0.20638619300546232
0.2063861930056658
0.2063861930077166
0.20638619302821865
0.20638619323323534
0.20638619528341492
0.2063862157852109
0.20638642080367606
```

```
Root absolute error:
2-dimensional space:
 - 1. dimension: classifier.ridge, min: -12.0, max: -2.0, step: 1.0
 - 2. dimension: classifier.maxIts, min: 1.0, max: 15.0, step: 1.0
47.23971367010865
47.23971367010872
47.23971367010979
47.23971367012142
47.2397136702324
47.239713671341384
47.239713682438314
47.23971379340394
47.239714903057106
47.23972599923225
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47.239836925154364
47.231951854542196
47.23195185454236
47.23195185454399
47.231951854559384
47.231951854712065
47.231951856240904
47.23195187153227
47.23195202444166
47.231953553532406
47.23196884437684
47.23212174525158
47.252441346283106
47.25244134628312
47.25244134628387
47.252441346292144
47.252441346375946
47.25244134720414
47.25244135549048
47.252441438343034
47.25244226686889
47.25245055189996
47.25253337920699
47.270042043148294
47.270042043148216
47.270042043149154
47.270042043157446
47.270042043240416
47.270042044071
47.27004205238339
47.2700421354998
47.27004296666536
47.270051278069914
47.27013436741409
46.96857082582156
46.96857082582176
46.968570825822674
46.968570825833424
46.96857082594008
46.96857082700588
46.96857083766154
46.968570944221824
46.968572009819944
46.96858266586706
46.96868923258757
47.41990345968209
47.41990345968211
47.41990345968319
47.41990345969389
47.4199034597986
47.419903460852986
47.41990347139369
47.41990357679716
47.41990463083171
47.41991517115986
47.42002057236331

47.25701278032425
47.25701278032437
47.25701278032569
47.257012780338584
47.25701278046953
47.25701278178206
47.25701279490627
47.257012926141826
47.257014238500396
47.25702736191156
47.257158578428395
47.20659346589329
47.20659346589329
47.20659346589461
47.20659346590525
47.20659346601499
47.206593467109336
47.20659347806154
47.2065935875742
47.20659468269946
47.206605633641246
47.20671511199125
47.394006094623286
47.394006094623414
47.39400609462416
47.394006094632324
47.39400609470776
47.39400609546314
47.39400610301659
47.394006178546405
47.39400693385291
47.3940144869037
47.394090016139444
47.27953931500092
47.279539315001
47.27953931500211
47.279539315011405
47.279539315103854
47.27953931602
47.27953932519094
47.27953941688516
47.27954033382947
47.27954950299805
47.27964116693096
47.16659017621148
47.166590176211635
47.16659017621339
47.16659017623144
47.16659017641868
47.16659017827872
47.16659019688883
47.166590382983294
47.166592243933586
47.16661085343918
47.166796948880666
47.65831652624323

47.658316526243404
47.658316526244434
47.65831652625782
47.65831652638725
47.658316527682175
47.65831654062487
47.65831667005312
47.65831796433835
47.65833090719525
47.65846033594484
47.585758642396065
47.585758642396186
47.58575864239794
47.58575864241497
47.58575864258424
47.5857586442726
47.58575866116467
47.58575883008306
47.58576051926724
47.58577741109078
47.58594632862444
50.24024662728419
50.2402466272843
50.24024662728587
50.24024662730336
50.24024662747327
50.24024662917242
50.24024664615813
50.24024681602336
50.24024851467384
50.24026550116924
50.24043536591764
62.84451906478562
62.84451906478565
62.84451906478629
62.84451906479329
62.84451906485525
62.844519065479716
62.84451907172259
62.8445191341501
62.844519758429016
62.84452600121826
62.84458842926472

Combined = (1-abs(CC)) + RRSE + RAE:
2-dimensional space:
 - 1. dimension: classifier.ridge, min: -12.0, max: -2.0, step: 1.0
 - 2. dimension: classifier.maxIts, min: 1.0, max: 15.0, step: 1.0
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Accuracy:
2-dimensional space:
 - 1. dimension: classifier.ridge, min: -12.0, max: -2.0, step: 1.0
 - 2. dimension: classifier.maxIts, min: 1.0, max: 15.0, step: 1.0
87.63326881125757
87.63326881125757
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87.63326881125757
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87.61944265216457
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87.58718161428088
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87.58564537438167
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87.57950041478477
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87.56413801579255
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87.34291947030448
87.34291947030448
86.84671398285556
86.84671398285556
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84.25661351276615
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84.25661351276615

Kappa:
2-dimensional space:

```
 - 1. dimension: classifier.ridge, min: -12.0, max: -2.0, step: 1.0
 - 2. dimension: classifier.maxIts, min: 1.0, max: 15.0, step: 1.0
0.5903054979345329
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0.5899404377187051
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0.5448537087882322
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0.5448537087882322
```

Best performance:
Performance (-2, 1): 84.25661351276615 (ACC)

Result of Step 1: -12, 11

=== Initial space - End ===

Center is on border of space.

Final result:-12, 11
Classifier: weka.classifiers.functions.Logistic -R 1.0E-12 -M 11
Shutting down thread pool...
Shutting down thread pool...
Starting thread pool with 1 slots...

weka.classifiers.meta.MultiSearch
=================================
Options: -E ACC -search "weka.core.setupgenerator.MathParameter -property classifier.ridge
-min -12.0 -max -2.0 -step 1.0 -base 10.0 -expression pow(BASE,I)" -search
"weka.core.setupgenerator.MathParameter -property classifier.maxIts -min 1.0 -max 15.0 -step
1.0 -base 10.0 -expression I" -sample-size 100.0 -log-file C:\Users\Su\Desktop\log.txt
-initial-folds 10 -subsequent-folds 10 -num-slots 1 -S 1 -W
weka.classifiers.functions.Logistic -- -R 1.0E-8 -M -1

Step 1:

=== Initial space - Start ===
Determining best values with 10-fold CV in space:
2-dimensional space:
 - 1. dimension: classifier.ridge, min: -12.0, max: -2.0, step: 1.0
 - 2. dimension: classifier.maxIts, min: 1.0, max: 15.0, step: 1.0

Performance (-12, 1): 84.30423694964206 (ACC): cached=false
Performance (-11, 1): 84.30423694964206 (ACC): cached=false
Performance (-10, 1): 84.30423694964206 (ACC): cached=false
Performance (-9, 1): 84.30423694964206 (ACC): cached=false
Performance (-8, 1): 84.30423694964206 (ACC): cached=false
Performance (-7, 1): 84.30423694964206 (ACC): cached=false
Performance (-6, 1): 84.30423694964206 (ACC): cached=false
Performance (-5, 1): 84.30423694964206 (ACC): cached=false
Performance (-4, 1): 84.30423694964206 (ACC): cached=false
Performance (-3, 1): 84.30423694964206 (ACC): cached=false
Performance (-2, 1): 84.30423694964206 (ACC): cached=false
Performance (-12, 2): 87.01416413187083 (ACC): cached=false
Performance (-11, 2): 87.01416413187083 (ACC): cached=false
Performance (-10, 2): 87.01416413187083 (ACC): cached=false
Performance (-9, 2): 87.01416413187083 (ACC): cached=false
Performance (-8, 2): 87.01416413187083 (ACC): cached=false
Performance (-7, 2): 87.01416413187083 (ACC): cached=false
Performance (-6, 2): 87.01416413187083 (ACC): cached=false
Performance (-5, 2): 87.01416413187083 (ACC): cached=false
Performance (-4, 2): 87.01416413187083 (ACC): cached=false
Performance (-3, 2): 87.01570037177005 (ACC): cached=false

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Performance (-2, 2): 87.01570037177005 (ACC): cached=false
Performance (-12, 3): 87.3782529879866 (ACC): cached=false
Performance (-11, 3): 87.3782529879866 (ACC): cached=false
Performance (-10, 3): 87.3782529879866 (ACC): cached=false
Performance (-9, 3): 87.3782529879866 (ACC): cached=false
Performance (-8, 3): 87.3782529879866 (ACC): cached=false
Performance (-7, 3): 87.3782529879866 (ACC): cached=false
Performance (-6, 3): 87.3782529879866 (ACC): cached=false
Performance (-5, 3): 87.3782529879866 (ACC): cached=false
Performance (-4, 3): 87.3782529879866 (ACC): cached=false
Performance (-3, 3): 87.3782529879866 (ACC): cached=false
Performance (-2, 3): 87.3782529879866 (ACC): cached=false
Performance (-12, 4): 87.37210802838972 (ACC): cached=false
Performance (-11, 4): 87.37210802838972 (ACC): cached=false
Performance (-10, 4): 87.37210802838972 (ACC): cached=false
Performance (-9, 4): 87.37210802838972 (ACC): cached=false
Performance (-8, 4): 87.37210802838972 (ACC): cached=false
Performance (-7, 4): 87.37210802838972 (ACC): cached=false
Performance (-6, 4): 87.37210802838972 (ACC): cached=false
Performance (-5, 4): 87.37210802838972 (ACC): cached=false
Performance (-4, 4): 87.37210802838972 (ACC): cached=false
Performance (-3, 4): 87.37210802838972 (ACC): cached=false
Performance (-2, 4): 87.37210802838972 (ACC): cached=false
Performance (-12, 5): 87.39515162687805 (ACC): cached=false
Performance (-11, 5): 87.39515162687805 (ACC): cached=false
Performance (-10, 5): 87.39515162687805 (ACC): cached=false
Performance (-9, 5): 87.39515162687805 (ACC): cached=false
Performance (-8, 5): 87.39515162687805 (ACC): cached=false
Performance (-7, 5): 87.39515162687805 (ACC): cached=false
Performance (-6, 5): 87.39515162687805 (ACC): cached=false
Performance (-5, 5): 87.39515162687805 (ACC): cached=false
Performance (-4, 5): 87.39515162687805 (ACC): cached=false
Performance (-3, 5): 87.39515162687805 (ACC): cached=false
Performance (-2, 5): 87.39515162687805 (ACC): cached=false
Performance (-12, 6): 87.49193474052908 (ACC): cached=false
Performance (-11, 6): 87.49193474052908 (ACC): cached=false
Performance (-10, 6): 87.49193474052908 (ACC): cached=false
Performance (-9, 6): 87.49193474052908 (ACC): cached=false
Performance (-8, 6): 87.49193474052908 (ACC): cached=false
Performance (-7, 6): 87.49193474052908 (ACC): cached=false
Performance (-6, 6): 87.49193474052908 (ACC): cached=false
Performance (-5, 6): 87.49193474052908 (ACC): cached=false
Performance (-4, 6): 87.49193474052908 (ACC): cached=false
Performance (-3, 6): 87.49193474052908 (ACC): cached=false
Performance (-2, 6): 87.49193474052908 (ACC): cached=false
Performance (-12, 7): 87.56413801579255 (ACC): cached=false
Performance (-11, 7): 87.56413801579255 (ACC): cached=false
Performance (-10, 7): 87.56413801579255 (ACC): cached=false
Performance (-9, 7): 87.56413801579255 (ACC): cached=false
Performance (-8, 7): 87.56413801579255 (ACC): cached=false
Performance (-7, 7): 87.56413801579255 (ACC): cached=false
Performance (-6, 7): 87.56413801579255 (ACC): cached=false
Performance (-5, 7): 87.56413801579255 (ACC): cached=false
Performance (-4, 7): 87.56413801579255 (ACC): cached=false
Performance (-3, 7): 87.56413801579255 (ACC): cached=false
Performance (-2, 7): 87.56413801579255 (ACC): cached=false
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Performance (-12, 8): 87.53648569760654 (ACC): cached=false
Performance (-11, 8): 87.53648569760654 (ACC): cached=false
Performance (-10, 8): 87.53648569760654 (ACC): cached=false
Performance (-9, 8): 87.53648569760654 (ACC): cached=false
Performance (-8, 8): 87.53648569760654 (ACC): cached=false
Performance (-7, 8): 87.53648569760654 (ACC): cached=false
Performance (-6, 8): 87.53648569760654 (ACC): cached=false
Performance (-5, 8): 87.53648569760654 (ACC): cached=false
Performance (-4, 8): 87.53648569760654 (ACC): cached=false
Performance (-3, 8): 87.53648569760654 (ACC): cached=false
Performance (-2, 8): 87.53648569760654 (ACC): cached=false
Performance (-12, 9): 87.52880449811042 (ACC): cached=false
Performance (-11, 9): 87.52880449811042 (ACC): cached=false
Performance (-10, 9): 87.52880449811042 (ACC): cached=false
Performance (-9, 9): 87.52880449811042 (ACC): cached=false
Performance (-8, 9): 87.52880449811042 (ACC): cached=false
Performance (-7, 9): 87.52880449811042 (ACC): cached=false
Performance (-6, 9): 87.52880449811042 (ACC): cached=false
Performance (-5, 9): 87.52880449811042 (ACC): cached=false
Performance (-4, 9): 87.52880449811042 (ACC): cached=false
Performance (-3, 9): 87.52880449811042 (ACC): cached=false
Performance (-2, 9): 87.52880449811042 (ACC): cached=false
Performance (-12, 10): 87.59332657387777 (ACC): cached=false
Performance (-11, 10): 87.59332657387777 (ACC): cached=false
Performance (-10, 10): 87.59332657387777 (ACC): cached=false
Performance (-9, 10): 87.59332657387777 (ACC): cached=false
Performance (-8, 10): 87.59332657387777 (ACC): cached=false
Performance (-7, 10): 87.59332657387777 (ACC): cached=false
Performance (-6, 10): 87.59332657387777 (ACC): cached=false
Performance (-5, 10): 87.59332657387777 (ACC): cached=false
Performance (-4, 10): 87.59332657387777 (ACC): cached=false
Performance (-3, 10): 87.59332657387777 (ACC): cached=false
Performance (-2, 10): 87.59332657387777 (ACC): cached=false
Performance (-12, 11): 87.56260177589333 (ACC): cached=false
Performance (-11, 11): 87.56260177589333 (ACC): cached=false
Performance (-10, 11): 87.56260177589333 (ACC): cached=false
Performance (-9, 11): 87.56260177589333 (ACC): cached=false
Performance (-8, 11): 87.56260177589333 (ACC): cached=false
Performance (-7, 11): 87.56260177589333 (ACC): cached=false
Performance (-6, 11): 87.56260177589333 (ACC): cached=false
Performance (-5, 11): 87.56260177589333 (ACC): cached=false
Performance (-4, 11): 87.56260177589333 (ACC): cached=false
Performance (-3, 11): 87.56260177589333 (ACC): cached=false
Performance (-2, 11): 87.56260177589333 (ACC): cached=false
Performance (-12, 12): 87.60715273297077 (ACC): cached=false
Performance (-11, 12): 87.60715273297077 (ACC): cached=false
Performance (-10, 12): 87.60715273297077 (ACC): cached=false
Performance (-9, 12): 87.60715273297077 (ACC): cached=false
Performance (-8, 12): 87.60715273297077 (ACC): cached=false
Performance (-7, 12): 87.60715273297077 (ACC): cached=false
Performance (-6, 12): 87.60715273297077 (ACC): cached=false
Performance (-5, 12): 87.60715273297077 (ACC): cached=false
Performance (-4, 12): 87.60715273297077 (ACC): cached=false
Performance (-3, 12): 87.60715273297077 (ACC): cached=false
Performance (-2, 12): 87.60868897287 (ACC): cached=false
Performance (-12, 13): 87.57796417488555 (ACC): cached=false
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Performance (-11, 13): 87.57796417488555 (ACC): cached=false
Performance (-10, 13): 87.57796417488555 (ACC): cached=false
Performance (-9, 13): 87.57796417488555 (ACC): cached=false
Performance (-8, 13): 87.57796417488555 (ACC): cached=false
Performance (-7, 13): 87.57796417488555 (ACC): cached=false
Performance (-6, 13): 87.57796417488555 (ACC): cached=false
Performance (-5, 13): 87.57796417488555 (ACC): cached=false
Performance (-4, 13): 87.57796417488555 (ACC): cached=false
Performance (-3, 13): 87.57796417488555 (ACC): cached=false
Performance (-2, 13): 87.57796417488555 (ACC): cached=false
Performance (-12, 14): 87.58257289458322 (ACC): cached=false
Performance (-11, 14): 87.58257289458322 (ACC): cached=false
Performance (-10, 14): 87.58257289458322 (ACC): cached=false
Performance (-9, 14): 87.58257289458322 (ACC): cached=false
Performance (-8, 14): 87.58257289458322 (ACC): cached=false
Performance (-7, 14): 87.58257289458322 (ACC): cached=false
Performance (-6, 14): 87.58257289458322 (ACC): cached=false
Performance (-5, 14): 87.58257289458322 (ACC): cached=false
Performance (-4, 14): 87.58257289458322 (ACC): cached=false
Performance (-3, 14): 87.58257289458322 (ACC): cached=false
Performance (-2, 14): 87.58257289458322 (ACC): cached=false
Performance (-12, 15): 87.59025409407933 (ACC): cached=false
Performance (-11, 15): 87.59025409407933 (ACC): cached=false
Performance (-10, 15): 87.59025409407933 (ACC): cached=false
Performance (-9, 15): 87.59025409407933 (ACC): cached=false
Performance (-8, 15): 87.59025409407933 (ACC): cached=false
Performance (-7, 15): 87.59025409407933 (ACC): cached=false
Performance (-6, 15): 87.59025409407933 (ACC): cached=false
Performance (-5, 15): 87.59025409407933 (ACC): cached=false
Performance (-4, 15): 87.59025409407933 (ACC): cached=false
Performance (-3, 15): 87.59025409407933 (ACC): cached=false
Performance (-2, 15): 87.59025409407933 (ACC): cached=false


Correlation coefficient:
2-dimensional space:
 - 1. dimension: classifier.ridge, min: -12.0, max: -2.0, step: 1.0
 - 2. dimension: classifier.maxIts, min: 1.0, max: 15.0, step: 1.0
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Root mean squared error:
2-dimensional space:
 - 1. dimension: classifier.ridge, min: -12.0, max: -2.0, step: 1.0
 - 2. dimension: classifier.maxIts, min: 1.0, max: 15.0, step: 1.0
0.3147753816457079
0.31477581276817385
0.3147758127681736
0.31477581276817
0.3147758127681319
0.3147758127677435
0.3147758127638627
0.3147758127250574
0.3147758123370165
0.31477580845660824
0.3147757696528159
0.31474542714624165
0.31474542714624143
0.314745427146238
0.31474542714620235

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0.31474542714587017
0.31474542714253845
0.314745427109221
0.31474542677602235
0.3147454234440596
0.31474539012463687
0.31474505695009947
0.31505970851588894
0.3150597085158884
0.3150597085158822
0.3150597085158298
0.3150597085153104
0.31505970851010334
0.3150597084580195
0.31505970793719645
0.31505970272894257
0.31505965064707786
0.31505912989436313
0.3150013478312711
0.31500134783127054
0.31500134783126527
0.3150013478312183
0.3150013478307358
0.31500134782592565
0.31500134777782457
0.3150013472968011
0.3150013424866138
0.3150012943852687
0.31500081342718744
0.315007315780861
0.3150073157808607
0.315007315780857
0.3150073157808113
0.31500731578035374
0.3150073157757756
0.31500731572998025
0.3150073152720371
0.315007310692609
0.3150072648987546
0.3150068070059495
0.3149237245746275
0.3149237245746272
0.3149237245746247
0.3149237245745961
0.3149237245743098
0.31492372457144996
0.3149237245428353
0.31492372425670156
0.31492372139537933
0.3149236927822668
0.31492340666414537
0.3147467328574871
0.3147467328574868
0.31474673285748406
0.3147467328574484
0.31474673285709936
```

0.3147467328535886
0.31474673281850923
0.31474673246772134
0.3147467289598336
0.31474669388118015
0.3147463431172699
0.31487429253887433
0.3148742925388741
0.3148742925388712
0.3148742925388435
0.3148742925385655
0.3148742925358029
0.314874292508171
0.31487429223185426
0.3148742894686691
0.31487426183695644
0.3148739855316427
0.3148640973717261
0.3148640973717261
0.3148640973717237
0.31486409737169413
0.3148640973713851
0.3148640973713851
0.31486409736832066
0.314864097337651
0.3148640970309802
0.31486409396425513
0.3148640632971627
0.3148637566404991
0.31546103041265217
0.315461030412652
0.31546103041264983
0.31546103041262225
0.3154610304123466
0.31546103040959156
0.3154610303820481
0.3154610301066267
0.3154610273523819
0.315460999810062
0.3154607243998198
0.3170010170145204
0.3170010170145201
0.3170010170145174
0.3170010170144845
0.3170010170141689
0.3170010170110098
0.31700101697941074
0.3170010166634422
0.31700101350374044
0.3170009819068341
0.31700066594657755
0.31956030101955474
0.3195603010195542
0.3195603010195503
0.31956030101951477
0.31956030101916216
0.3195603010156255

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0.31956030098025223
0.31956030062651836
0.3195602970891765
0.31956026171583835
0.3195599079926618
0.31780144808881855
0.3178014480888182
0.31780144808881494
0.31780144808878186
0.31780144808844035
0.31780144808502025
0.317801448050835
0.3178014477089844
0.3178014442904718
0.31780141010548596
0.31780106826614885
0.3237660623986053
0.32376565044998307
0.3237661081718481
0.3237661081718478
0.3237661081718437
0.3237661081718029
0.3237661081713915
0.32376610816727214
0.32376610812607554
0.32376610771411646
0.32376610359451424
0.3471020638622855
0.34710206386228504
0.3471020638622793
0.34710206386222275
0.34710206386165543
0.3471020638559904
0.3471020637993339
0.347102063232785
0.3471020575672442
0.3471020009119409
0.3471014343667307
```

```
Root relative squared error:
2-dimensional space:
 - 1. dimension: classifier.ridge, min: -12.0, max: -2.0, step: 1.0
 - 2. dimension: classifier.maxIts, min: 1.0, max: 15.0, step: 1.0
77.68067911566663
77.68078550863092
77.68078550863086
77.68078550862998
77.68078550862056
77.68078550852472
77.68078550756701
77.68078549799058
77.68078540222936
77.68078444461715
77.68077486856667
```

77.67328690523092
77.67328690523087
77.67328690523001
77.67328690522122
77.67328690513925
77.67328690431704
77.67328689609491
77.67328681386772
77.6732859916016
77.67327776899103
77.67319554774426
77.75084567142149
77.75084567142135
77.75084567141982
77.75084567140689
77.75084567127871
77.75084566999371
77.75084565714039
77.750845528611
77.7508442433113
77.75083139048083
77.75070287844689
77.73644334557545
77.73644334557531
77.73644334557402
77.73644334556242
77.73644334544335
77.73644334425629
77.73644333238585
77.73644321367826
77.73644202661396
77.73643015610129
77.73631146463889
77.73791612395681
77.73791612395674
77.73791612395581
77.73791612394454
77.73791612383162
77.73791612270183
77.7379161114004
77.73791599838859
77.73791486827135
77.73790356720424
77.73779056782077
77.71728737708858
77.71728737708851
77.7172873770879
77.71728737708084
77.71728737701018
77.71728737630443
77.71728736924287
77.71728729863041
77.7172865925096
77.71727953132836
77.71720892272529
77.67360913035458

77.6736091303545
77.67360913035382
77.67360913034503
77.6736091302589
77.6736091293925
77.67360912073556
77.67360903416768
77.67360816848655
77.67359951173073
77.6735129497556
77.7050884748514
77.70508847485134
77.70508847485061
77.70508847484379
77.70508847477518
77.70508847409342
77.70508846727438
77.70508839908457
77.70508771718212
77.70508089819205
77.70501271120645
77.70257249820915
77.70257249820915
77.70257249820857
77.70257249820126
77.702572498125
77.70257249736875
77.70257248980006
77.70257241411943
77.70257165730902
77.70256408924396
77.70248841211267
77.84988441238517
77.84988441238512
77.8498844123846
77.84988441237778
77.84988441230976
77.84988441162987
77.84988440483265
77.8498843368638
77.84988365716768
77.84987686023806
77.84980889413939
78.2299243139706
78.22992431397053
78.22992431396986
78.22992431396175
78.22992431388386
78.22992431310425
78.2299243053062
78.22992422733107
78.22992344757574
78.22991565005
78.22983767696591
78.86150775776322
78.86150775776308

78.86150775776211
78.86150775775334
78.86150775766633
78.86150775679356
78.86150774806408
78.86150766076918
78.86150678781935
78.86149805834083
78.86141076607412
78.42745573816167
78.42745573816158
78.42745573816077
78.4274557381526
78.42745573806833
78.42745573722432
78.4274557287882
78.42745564442569
78.4274548008007
78.42744636458532
78.42736200502799
79.89941103474442
79.8993093735263
79.89942233072497
79.8994223307249
79.89942233072404
79.89942233071382
79.89942233061228
79.89942232959571
79.89942231942915
79.89942221776536
79.89942120112455
85.65829990357977
85.65829990357967
85.65829990357825
85.6582999035643
85.6582999034243
85.65829990202627
85.6582998880445
85.6582997482302
85.65829835008128
85.65828436861166
85.65814455584598

Mean absolute error:
2-dimensional space:
 - 1. dimension: classifier.ridge, min: -12.0, max: -2.0, step: 1.0
 - 2. dimension: classifier.maxIts, min: 1.0, max: 15.0, step: 1.0
0.15312114004160776
0.15312082503698707
0.1531208250369871
0.1531208250369901
0.1531208250370184
0.153120825037303
0.15312082504013524

```
0.15312082506848174
0.15312082535196986
0.15312082818683279
0.15312085653564012
0.15328898429395765
0.15328898429395807
0.15328898429396143
0.1532889842939934
0.15328898429429172
0.15328898429729843
0.15328898432736002
0.15328898462798055
0.15328898763418494
0.15328901769624867
0.15328931831878456
0.15338745428249123
0.15338745428249154
0.15338745428249406
0.15338745428251188
0.15338745428268508
0.15338745428443915
0.1533874543019422
0.1533874544770023
0.15338745622760158
0.15338747373407527
0.1533876488479911
0.15335064540341642
0.15335064540341703
0.1533506454034183
0.15335064540343765
0.1533506454036305
0.15335064540556845
0.1533506454249289
0.15335064561855724
0.15335064755482433
0.15335066691795293
0.15335086059232358
0.1533804165174035
0.15338041651740345
0.15338041651740472
0.15338041651742798
0.15338041651764855
0.15338041651986256
0.15338041654201373
0.15338041676354788
0.1533804189788625
0.15338044113232083
0.15338066269831385
0.1534356161607953
0.15343561616079526
0.1534356161607991
0.15343561616083898
0.15343561616123733
0.153435616165235
0.15343561620519383
0.15343561660480334
```

```
0.15343562060089297
0.1534356605617526
0.15343606016682104
0.15326110092672081
0.15326110926720837
0.15326110926721181
0.1532611092672415
0.15326110926753717
0.15326110927051595
0.15326110930029863
0.15326110959811456
0.15326111257627115
0.15326114235799834
0.15326144018966997
0.15219590458509263
0.1521959045850932
0.15219590458509774
0.15219590458514182
0.15219590458559362
0.1521959045900941
0.15219590463511712
0.15219590508534409
0.15219590958758758
0.1521959546101596
0.152196404844724
0.15381047584962854
0.15381047584962892
0.15381047584963298
0.15381047584966978
0.15381047585004765
0.15381047585382626
0.15381047589160063
0.15381047626934508
0.15381048004679712
0.15381051782134947
0.15381089557158842
0.15312151743765812
0.1531215174376587
0.15312151743766172
0.153121517437696
0.1531215174380391
0.15312151744145416
0.15312151747564187
0.15312151781748912
0.15312152123595102
0.1531215554207505
0.153121897284762
0.15427794049916083
0.15427794049916124
0.15427794049916652
0.15427794049922036
0.15427794049977472
0.15427794050530128
0.15427794056056982
0.15427794111327606
0.15427794664032138
```

```
0.1542780019107581
0.1542785546117115
0.15503060046815956
0.15503060046815995
0.155030600468165
0.15503060046821593
0.1550306004687505
0.15503060047405698
0.15503060052713355
0.155030601057906
0.15503060636561378
0.1550306594426779
0.15503119021158265
0.1553046313263472
0.1553046313263476
0.15530463132635167
0.1553046313263927
0.1553046313268015
0.15530463133088646
0.1553046313717459
0.15530463178033213
0.1553046358662074
0.1553046767249669
0.15530508531317166
0.16301071466474296
0.1630112939697242
0.16301065029743483
0.16301065029743544
0.16301065029744125
0.16301065029750014
0.16301065029807701
0.16301065030387094
0.16301065036180018
0.16301065094110764
0.16301065673416806
0.20599547537062327
0.2059954753706235
0.20599547537062593
0.20599547537064686
0.2059954753708503
0.20599547537289464
0.20599547539331461
0.20599547559751222
0.20599547763951281
0.2059954980595172
0.20599570226012046
```

Root absolute error:
2-dimensional space:
  - 1. dimension: classifier.ridge, min: -12.0, max: -2.0, step: 1.0
  - 2. dimension: classifier.maxIts, min: 1.0, max: 15.0, step: 1.0
46.625330233757545
46.625234314967614
46.62523431496763

46.625234314968544
46.62523431497716
46.62523431506382
46.625234315926235
46.62523432455774
46.62523441087976
46.625235274094464
46.625243906295765
46.676438746217194
46.67643874621732
46.67643874621834
46.67643874622808
46.676438746318915
46.67643874723446
46.6764387563882
46.67643884792704
46.67643976331516
46.67644891720239
46.676540456652845
46.70642282112837
46.70642282112846
46.70642282112924
46.70642282113466
46.706422821187395
46.70642282172151
46.70642282705118
46.70642288035692
46.706423413413745
46.70642874412848
46.70648206625077
46.69521453113046
46.695214531130645
46.69521453113103
46.69521453113692
46.69521453119564
46.695214531785744
46.695214537681
46.69521459664075
46.69521518623336
46.69522108229883
46.69528005607271
46.704279824274806
46.70427982427479
46.704279824275176
46.70427982428227
46.70427982434943
46.70427982502359
46.70427983176861
46.70427989922568
46.70428057378816
46.70428731950798
46.704354786270514
46.72108809517214
46.721088095172135
46.7210880951733
46.72108809518544

46.72108809530674
46.72108809652403
46.72108810869148
46.72108823037243
46.72108944718023
46.721101615247136
46.72122329484196
46.66795081093197
46.667950810932055
46.6679508109331
46.667950810942145
46.66795081103217
46.66795081193921
46.66795082100802
46.66795091169287
46.66795181854044
46.6679608870653
46.66805157669862
46.343596381121145
46.34359638112132
46.34359638112271
46.34359638113612
46.343596381273706
46.343596382644094
46.34359639635358
46.34359653344753
46.343597904379
46.343611613735455
46.34374870999297
46.83523273110173
46.835232731101854
46.83523273110309
46.835232731114296
46.835232731229354
46.83523273237994
46.83523274388222
46.835232858905265
46.83523400913801
46.83524551147516
46.83536053628252
46.62544515071462
46.625445150714796
46.62544515071571
46.62544515072615
46.62544515083062
46.62544515187051
46.625445162280656
46.62544526637301
46.625446307293394
46.62545671655213
46.62556081401657
46.977575543146685
46.97757554314681
46.97757554314841
46.97757554316481
46.977575543333614

46.97757554501645
46.9775755618457
46.977575730144544
46.97757741312779
46.97759424295523
46.97776254019012
47.20676022397364
47.20676022397376
47.2067602239753
47.206760223990806
47.20676022415358
47.2067602257694
47.2067602419312
47.206760403551215
47.20676201974626
47.206778181692556
47.20693980062679
47.29020251844563
47.29020251844575
47.29020251844699
47.29020251845948
47.29020251858397
47.29020251982783
47.29020253226952
47.29020265668387
47.29020390083137
47.290216342308455
47.29034075726496
49.636702030948776
49.636878429100264
49.63668243112756
49.63668243112932
49.636682431147264
49.63668243132924
49.63668243308717
49.636682450726596
49.63668262712551
49.63668439111026
62.725545690198686
62.72554569019876
62.7255456901995
62.72554569020587
62.725545690267815
62.725545690890314
62.72554569710819
62.72554575928629
62.72554638107471
62.72555259895846
62.72561477796625

Combined = (1-abs(CC)) + RRSE + RAE:
2-dimensional space:
 - 1. dimension: classifier.ridge, min: -12.0, max: -2.0, step: 1.0

```
 - 2. dimension: classifier.maxIts, min: 1.0, max: 15.0, step: 1.0
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Accuracy:
2-dimensional space:
 - 1. dimension: classifier.ridge, min: -12.0, max: -2.0, step: 1.0
 - 2. dimension: classifier.maxIts, min: 1.0, max: 15.0, step: 1.0
87.60868897287
87.60715273297077
87.60715273297077
87.60715273297077
87.60715273297077
87.60715273297077
87.60715273297077
87.60715273297077
87.60715273297077
87.60715273297077
87.60715273297077
87.59332657387777
87.59332657387777
87.59332657387777
87.59332657387777
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87.59332657387777
87.59332657387777
87.59332657387777
87.59332657387777
87.59332657387777
87.59025409407933
87.59025409407933
87.59025409407933
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87.59025409407933
87.59025409407933
87.59025409407933
87.59025409407933
87.59025409407933
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Kappa:
2-dimensional space:
 - 1. dimension: classifier.ridge, min: -12.0, max: -2.0, step: 1.0
 - 2. dimension: classifier.maxIts, min: 1.0, max: 15.0, step: 1.0
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Best performance:
Performance (-2, 1): 84.30423694964206 (ACC)

Result of Step 1: -2, 12

=== Initial space - End ===

Center is on border of space.

Final result:-2, 12
Classifier: weka.classifiers.functions.Logistic -R 0.01 -M 12
Shutting down thread pool...