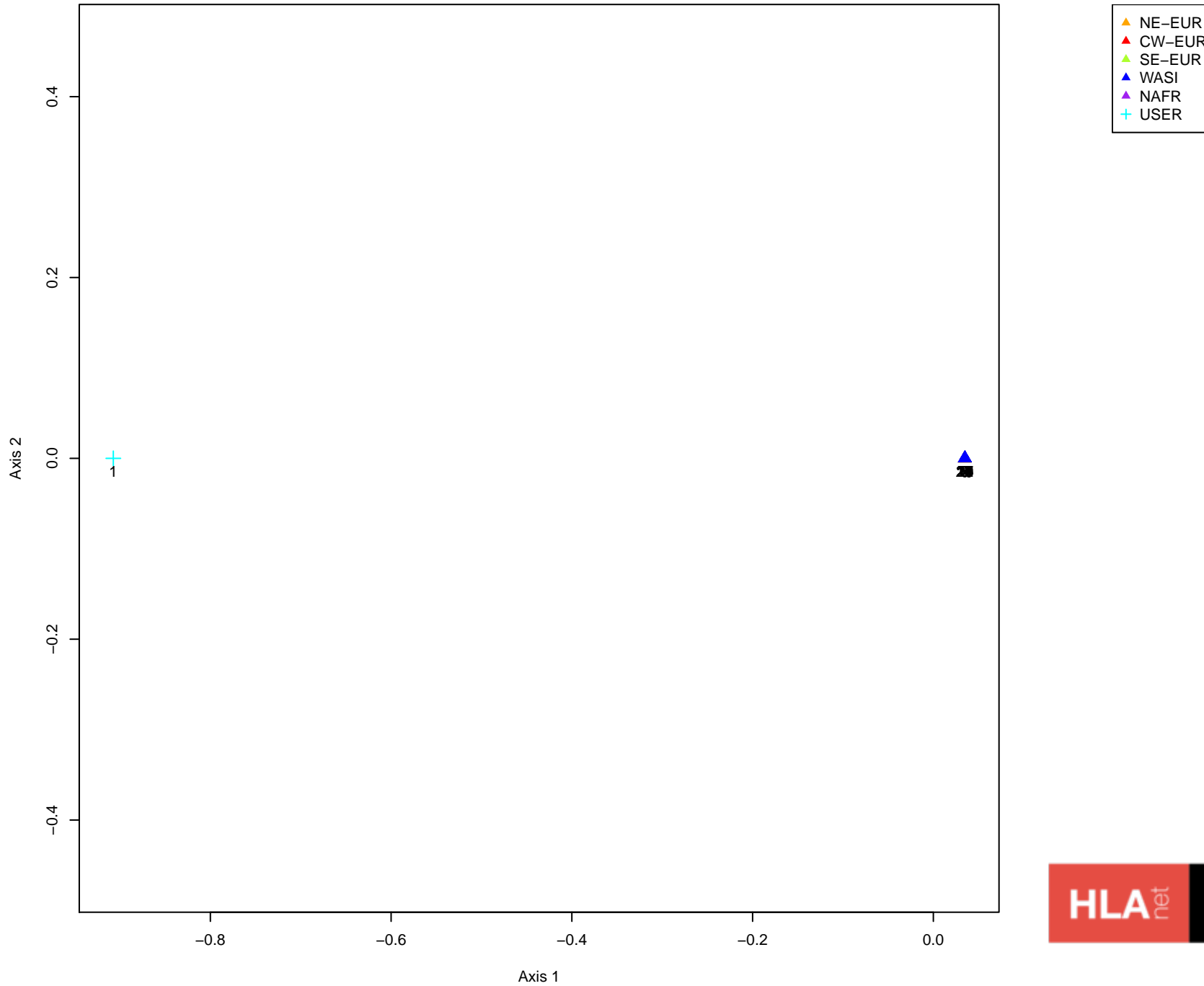


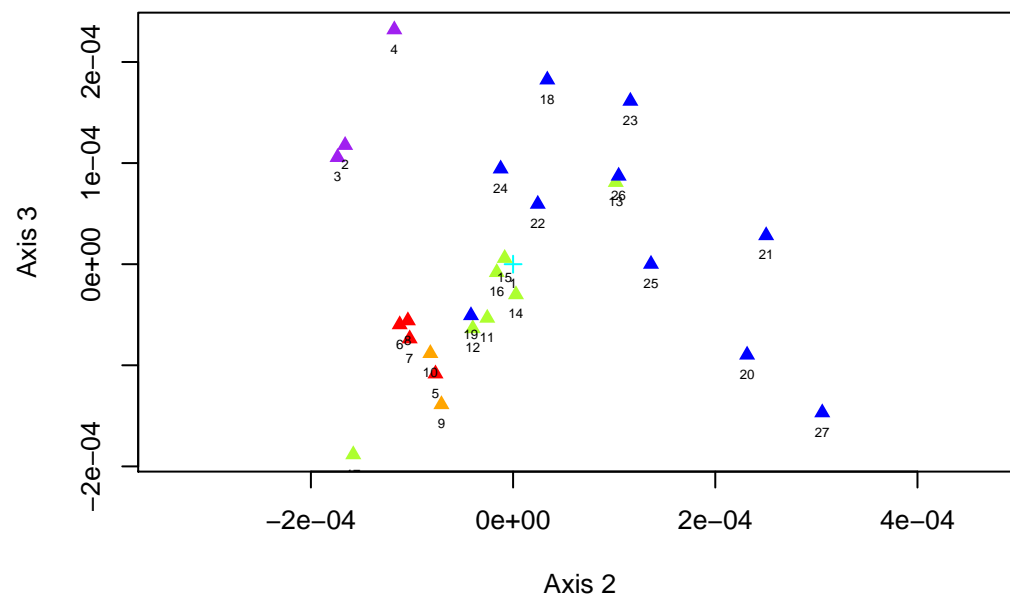
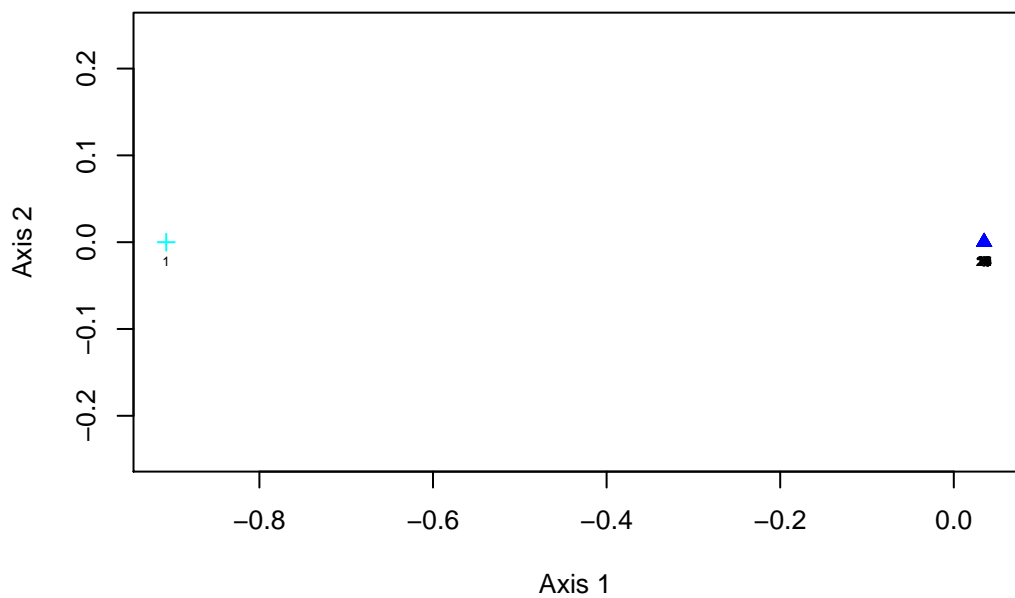
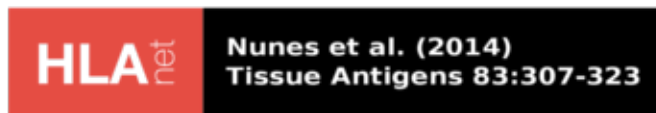
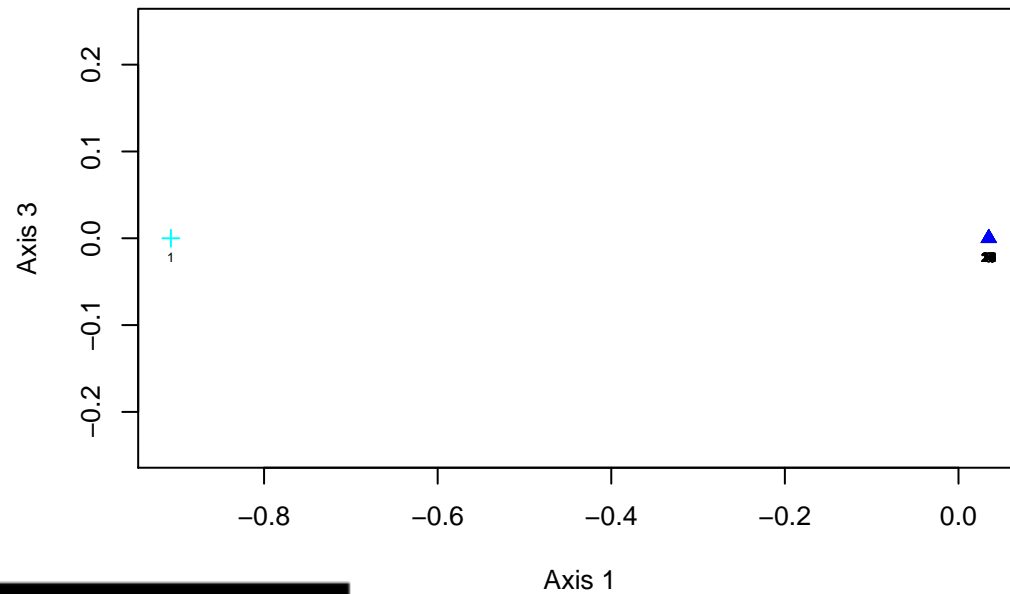
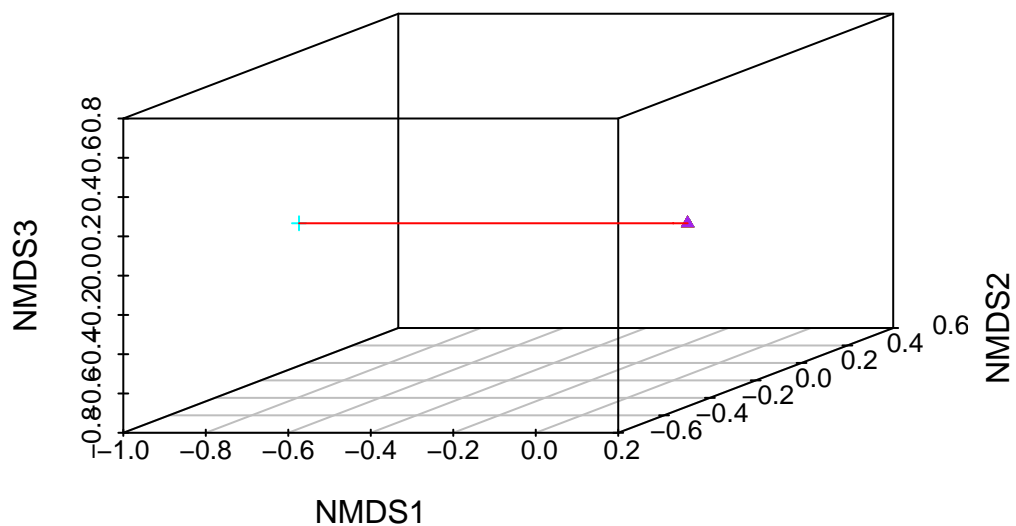
Supplementary Figure 4.1 (Figure S4.1): High resolution (four digit) NMDS global comparison of South African HLA ~A, ~B, ~C, ~DRB1, ~DQA1, and ~DQB1 non metric multidimensional scaling analysis using gene[rate] tools⁴⁸.

HLA-A data (stress=7.391e-05)

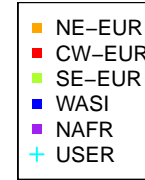
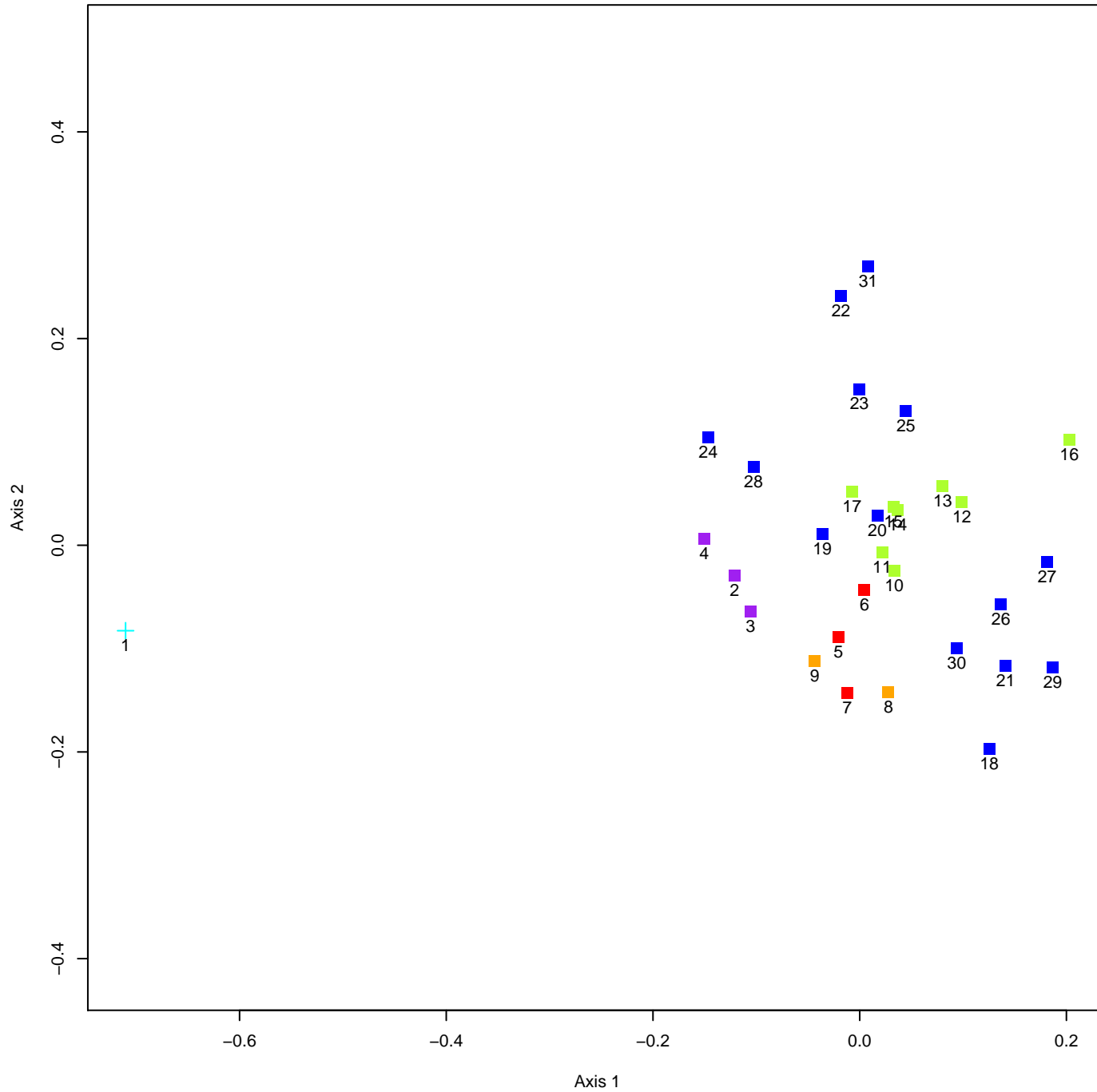


- 1 SouthAfricans [col] (N=260)
- 2 Chaouya [15WS.p2] (N=74)
- 3 Metalsa [15WS.p13] (N=71)
- 4 Sudanese [16WS.p35] (N=230)
- 5 Austrians Oetztal [15WS.p6] (N=57)
- 6 British Wales [16WS.p27] (N=1000)
- 7 Czechs [13WS.p32] (N=105)
- 8 Irish [13WS.p35] (N=999)
- 9 Finns [13WS.p33] (N=90)
- 10 Russians Vologda [16WS.p15] (N=108)
- 11 Croatians [13WS.p31] (N=150)
- 12 Croatians [16WS.p37] (N=202)
- 13 Greek Cypriots [12WS.p166] (N=101)
- 14 Greeks [12WS.p34] (N=85)
- 15 Greeks [15WS.p12] (N=144)
- 16 Greeks [16WS.p44] (N=232)
- 17 Kosovo Albanians [16WS.p52] (N=120)
- 18 Druzes [13WS.p58] (N=100)
- 19 Georgians [13WS.p34] (N=105)
- 20 Indians Golla [13WS.p63] (N=88)
- 21 Indians New Dehli [13WS.p61] (N=66)
- 22 Israeli Jews [13WS.p59] (N=117)
- 23 Kurdish [13WS.p60] (N=30)
- 24 Omani [13WS.p62] (N=119)
- 25 Pathans [12WS.p219] (N=36)
- 26 Sindhi [12WS.p213] (N=39)
- 27 Tamil [13WS.p64] (N=50)

3D stress= 9.936e-05

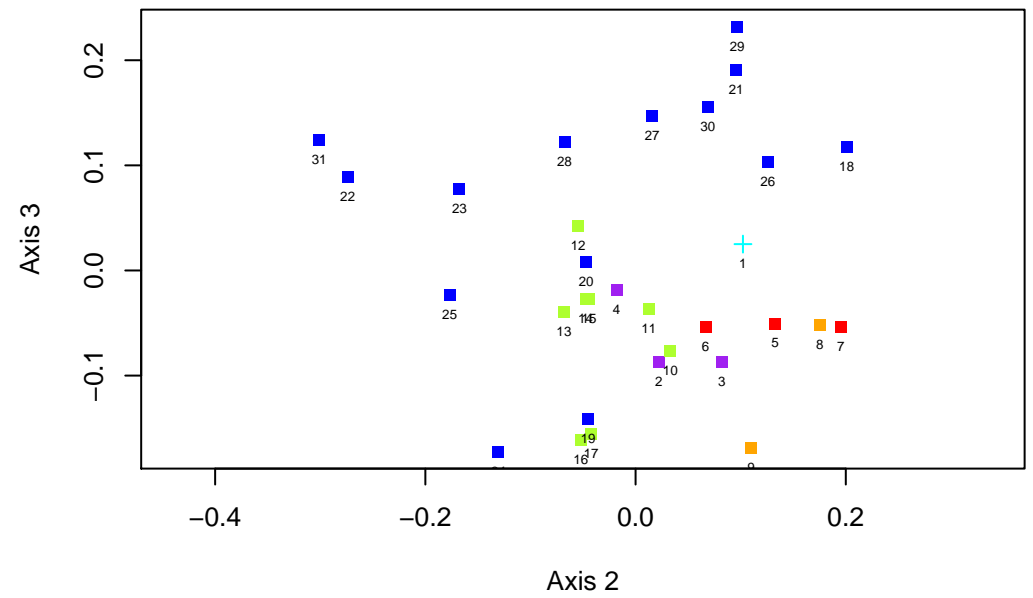
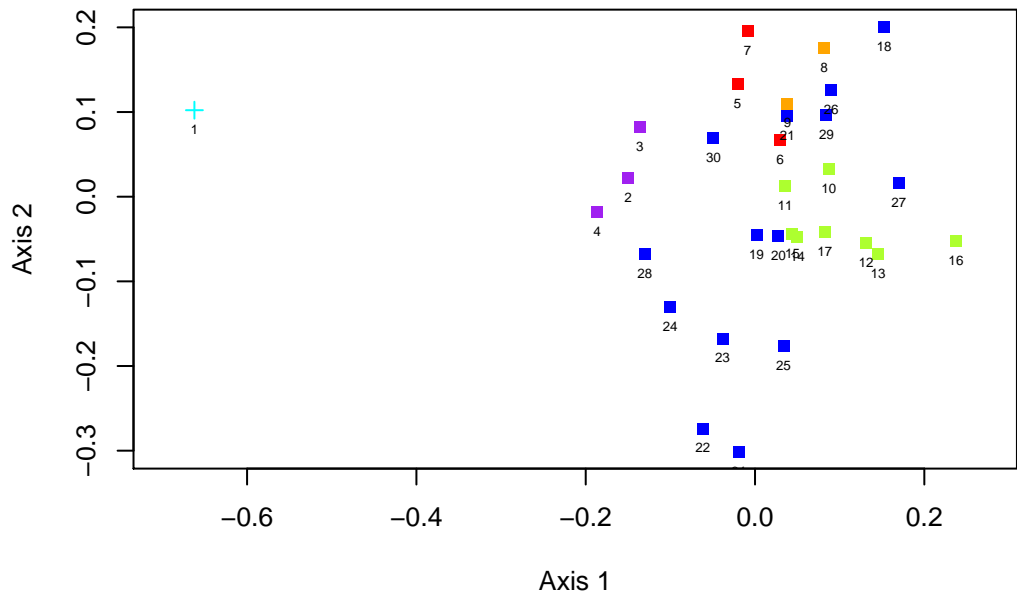
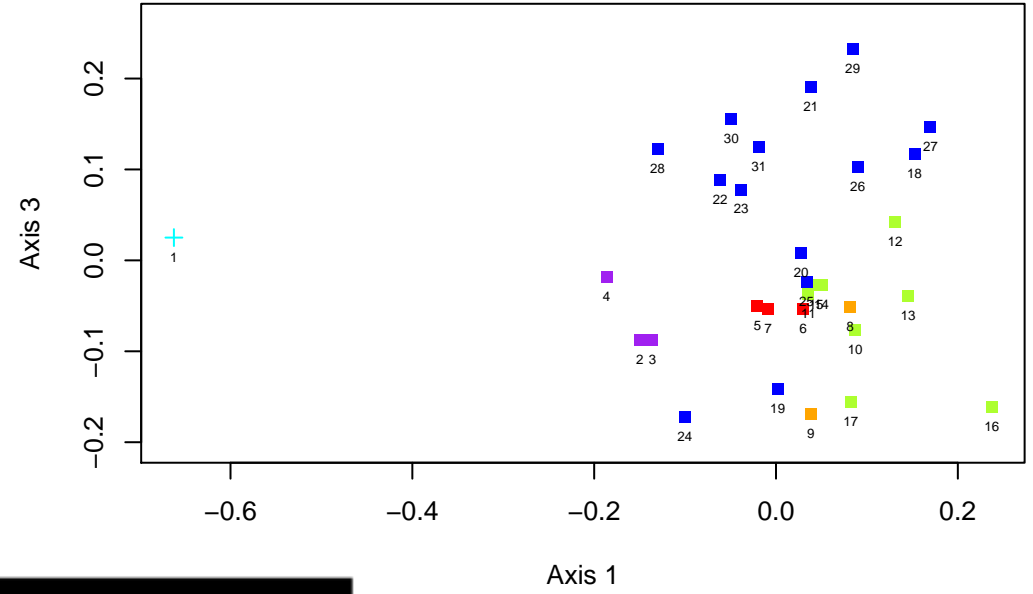
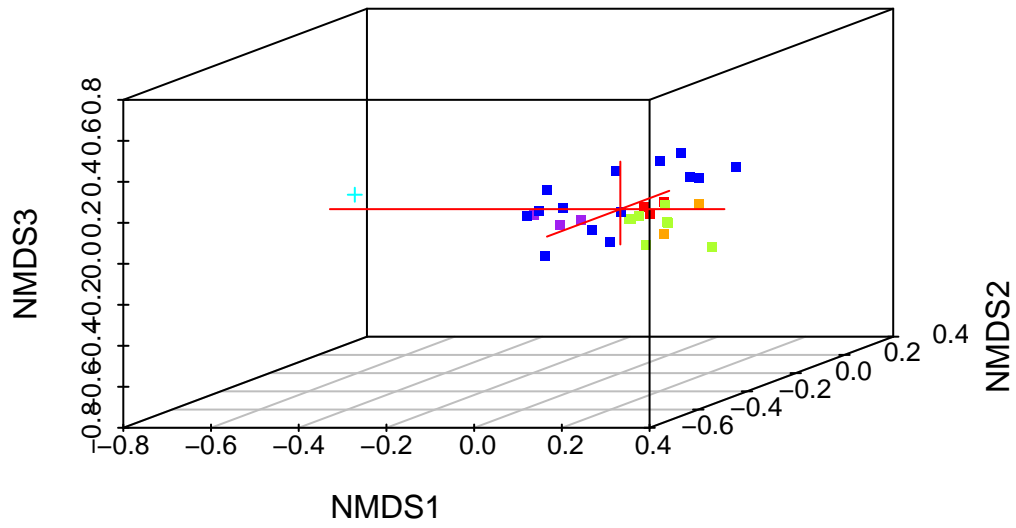


HLA-B data (stress=0.1915)

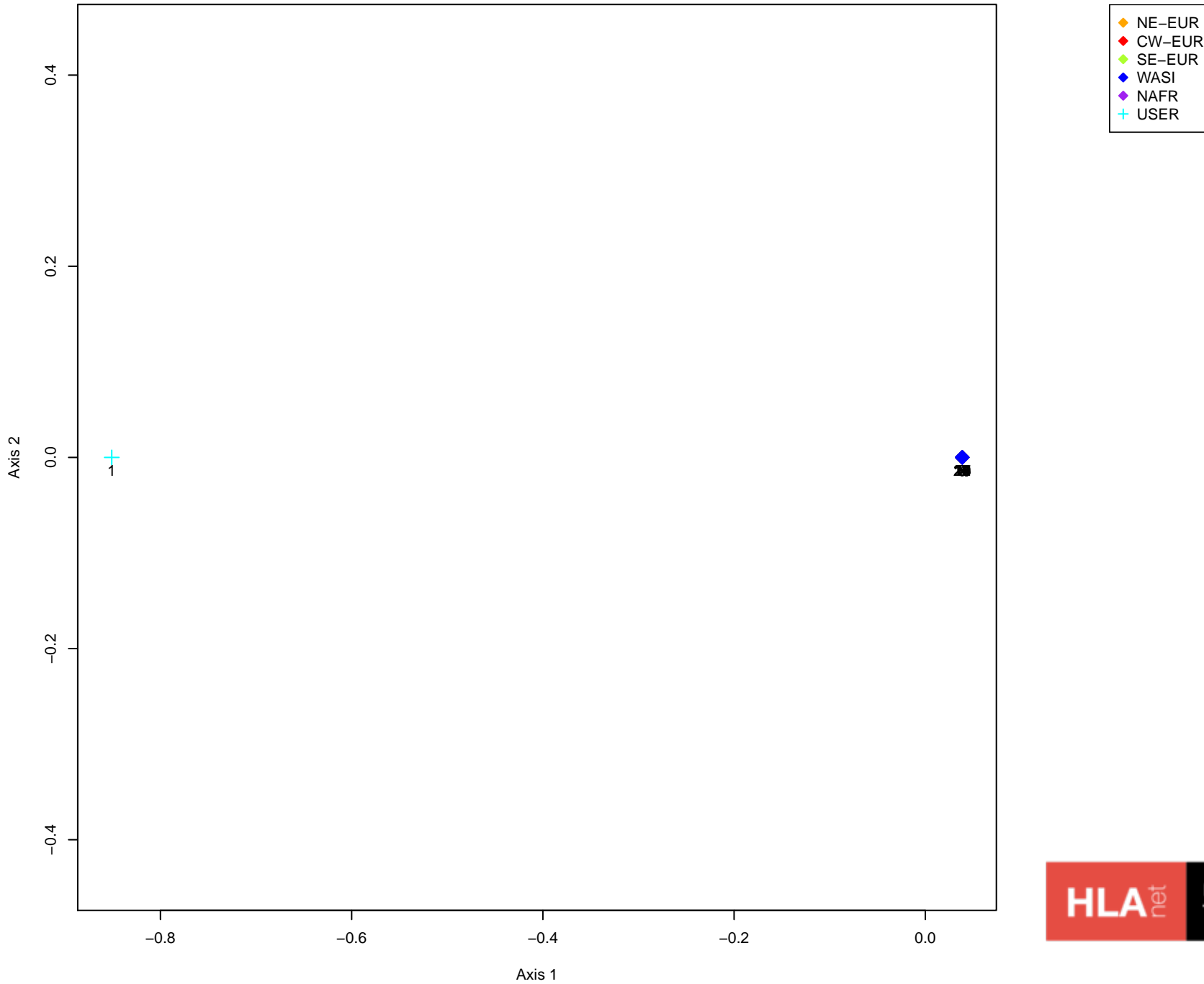


- 1 SouthAfricans [col] (N=618)
- 2 Chaouya [15WS.p2] (N=73)
- 3 Metalsa [15WS.p13] (N=68)
- 4 Sudanese [16WS.p35] (N=230)
- 5 British Wales [16WS.p27] (N=1000)
- 6 Czechs [13WS.p32] (N=106)
- 7 Irish [13WS.p35] (N=1000)
- 8 Finns [13WS.p33] (N=90)
- 9 Russians Vologda [16WS.p15] (N=108)
- 10 Croatians [13WS.p31] (N=150)
- 11 Croatians [16WS.p37] (N=202)
- 12 Greek Cypriots [12WS.p166] (N=95)
- 13 Greeks [12WS.p34] (N=83)
- 14 Greeks [15WS.p12] (N=144)
- 15 Greeks [16WS.p44] (N=232)
- 16 Kosovo Albanians [16WS.p52] (N=120)
- 17 Macedonians [15WS.p19] (N=247)
- 18 Ashkenazi Jews [12WS.p116] (N=40)
- 19 Druzes [13WS.p58] (N=100)
- 20 Georgians [13WS.p34] (N=107)
- 21 Hunza Burushaski [12WS.p214] (N=46)
- 22 Indians Golla [13WS.p63] (N=104)
- 23 Indians New Dehli [13WS.p61] (N=66)
- 24 Israeli Jews [13WS.p59] (N=109)
- 25 Kurdish [13WS.p60] (N=29)
- 26 Libyan Jews [12WS.p153] (N=40)
- 27 Morrocan Jews [12WS.p117] (N=40)
- 28 Omani [13WS.p62] (N=120)
- 29 Pathans [12WS.p219] (N=38)
- 30 Sindhi [12WS.p213] (N=39)
- 31 Tamil [13WS.p64] (N=49)

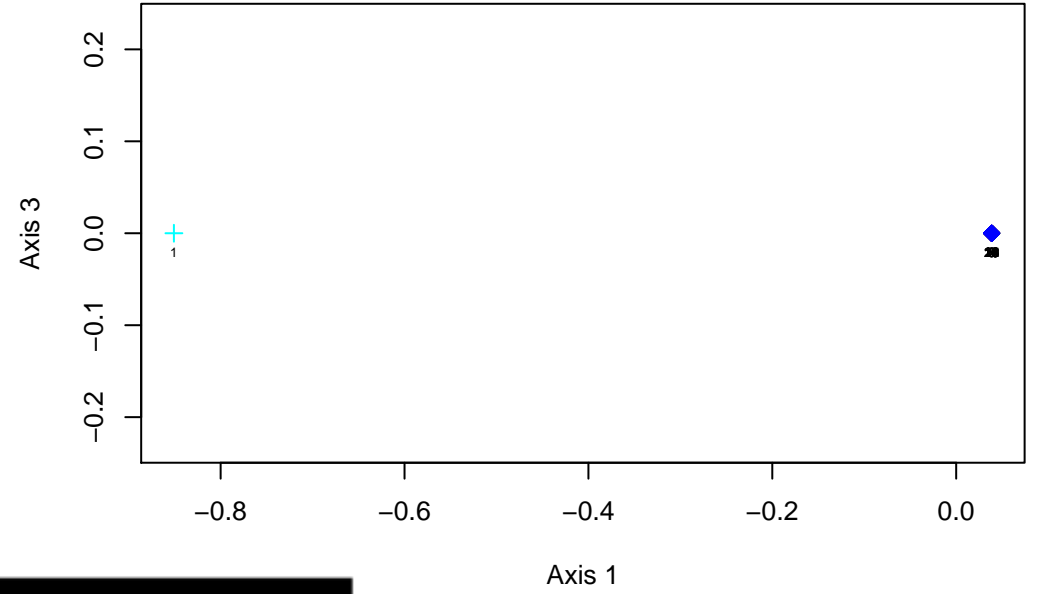
3D stress= 0.1224



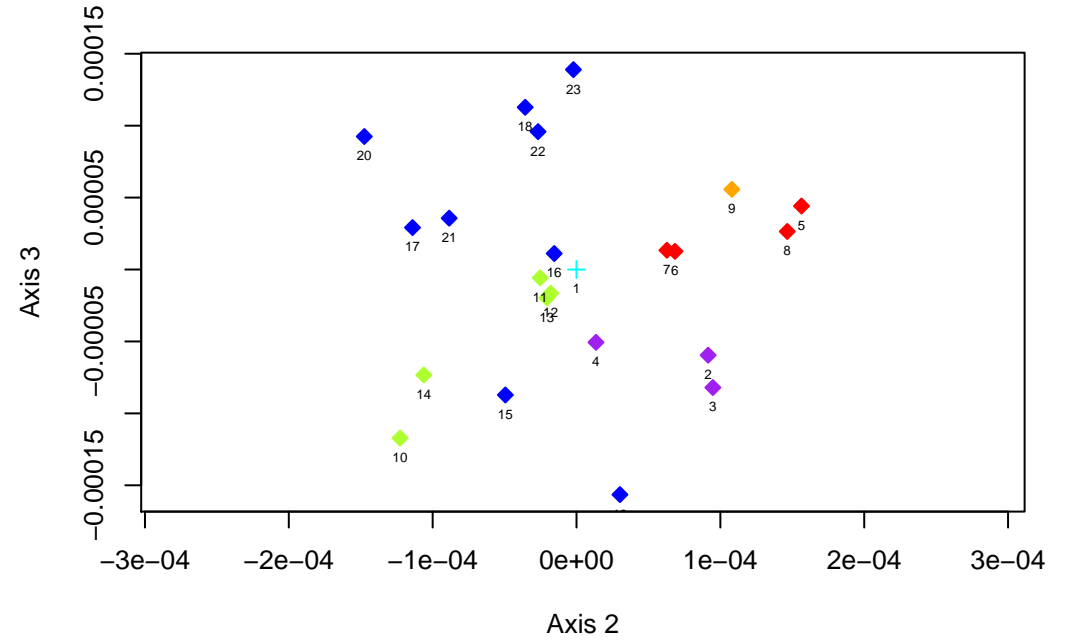
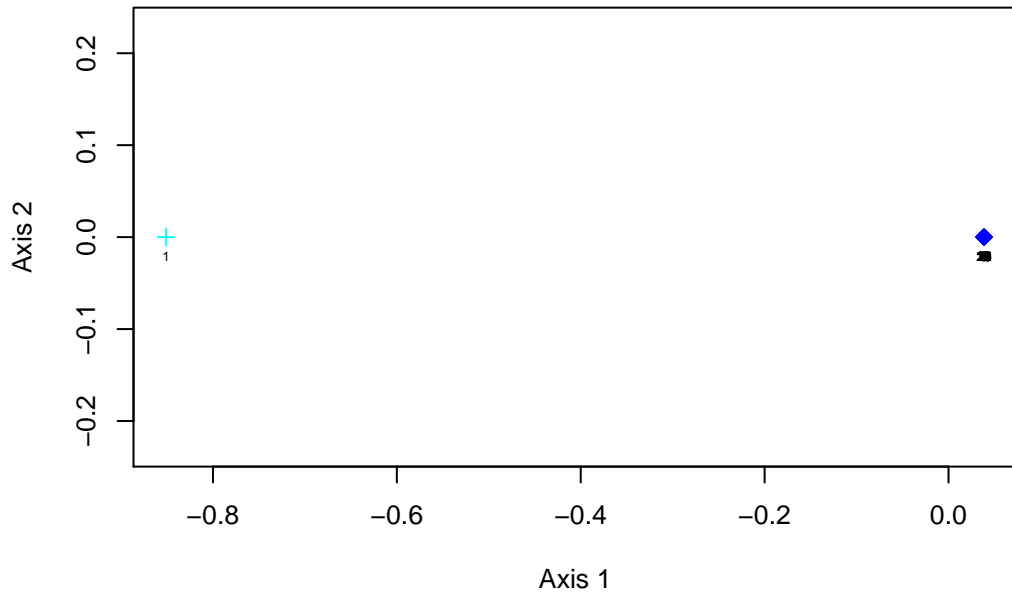
HLA-C data (stress=8.573e-05)



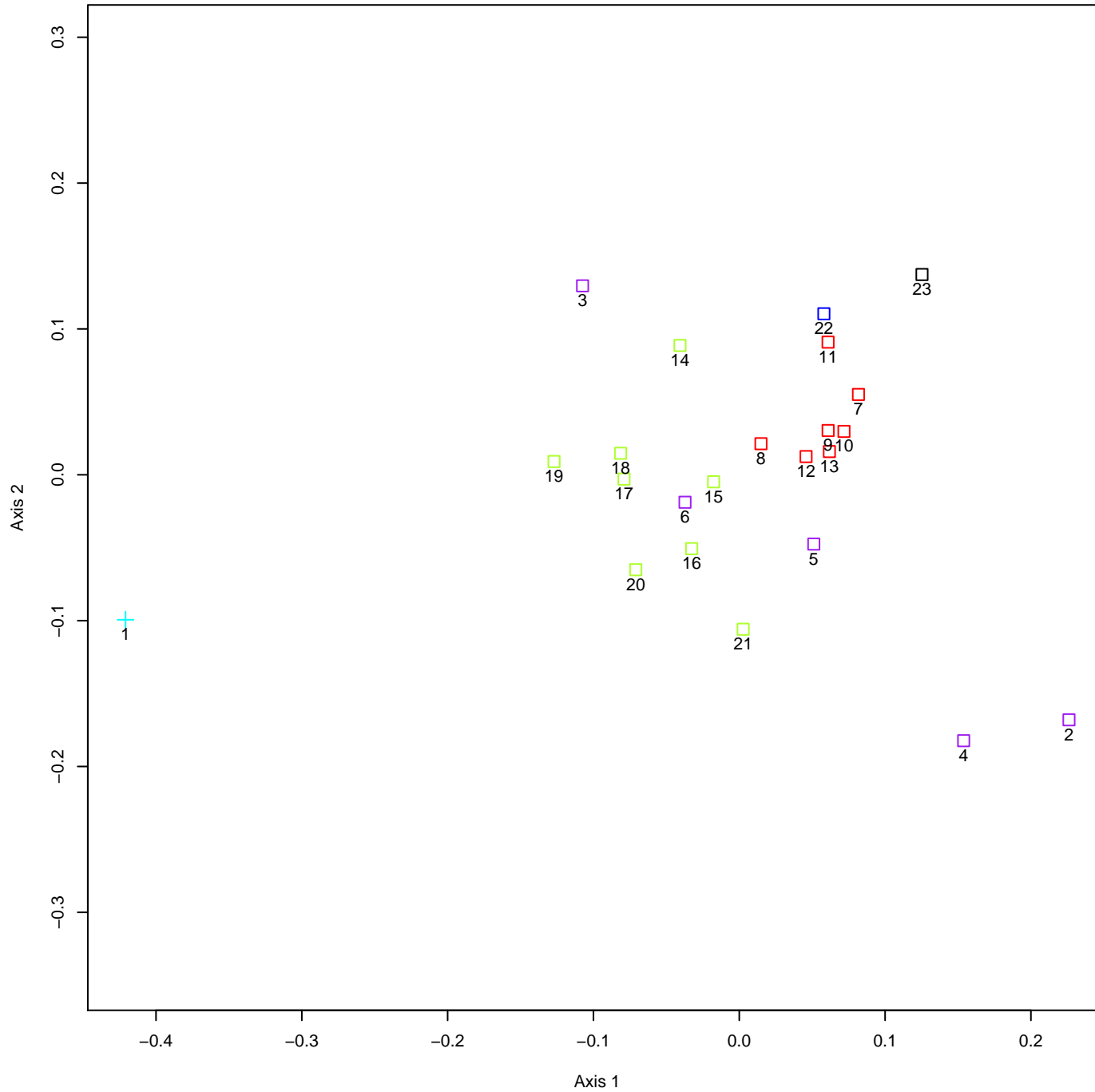
- 1 SouthAfricans [col] (N=144)
- 2 Chaouya [15WS.p2] (N=72)
- 3 Metalsa [15WS.p13] (N=63)
- 4 Sudanese [16WS.p35] (N=230)
- 5 British Wales [16WS.p27] (N=1000)
- 6 Czechs [13WS.p32] (N=105)
- 7 French Montpellier [16WS.p36] (N=2647)
- 8 Irish [13WS.p35] (N=1000)
- 9 Finns [13WS.p33] (N=90)
- 10 Albanians [15WS.p20] (N=145)
- 11 Greeks [15WS.p12] (N=144)
- 12 Greeks [16WS.p44] (N=232)
- 13 Kosovo Albanians [16WS.p52] (N=120)
- 14 Macedonians [15WS.p19] (N=250)
- 15 Druzes [13WS.p58] (N=100)
- 16 Georgians [13WS.p34] (N=107)
- 17 Hunza Burushaski [12WS.p214] (N=46)
- 18 Indians New Dehli [13WS.p61] (N=56)
- 19 Israeli Jews [13WS.p59] (N=94)
- 20 Kurdish [13WS.p60] (N=29)
- 21 Pathans [12WS.p219] (N=38)
- 22 Sindhi [12WS.p213] (N=39)
- 23 Tamil [13WS.p64] (N=48)



HLAnet
 Nunes et al. (2014)
 Tissue Antigens 83:307-323

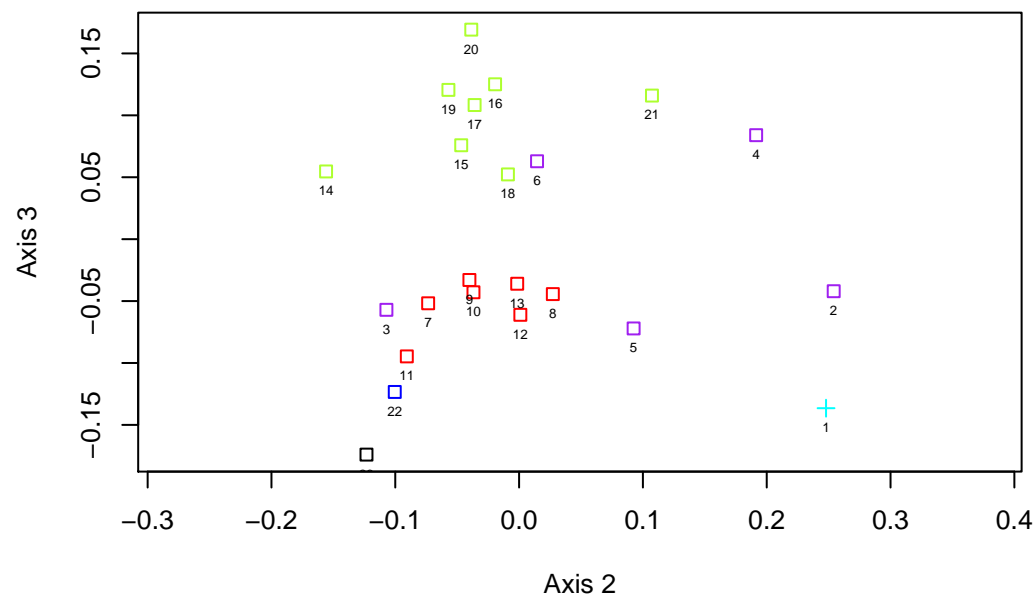
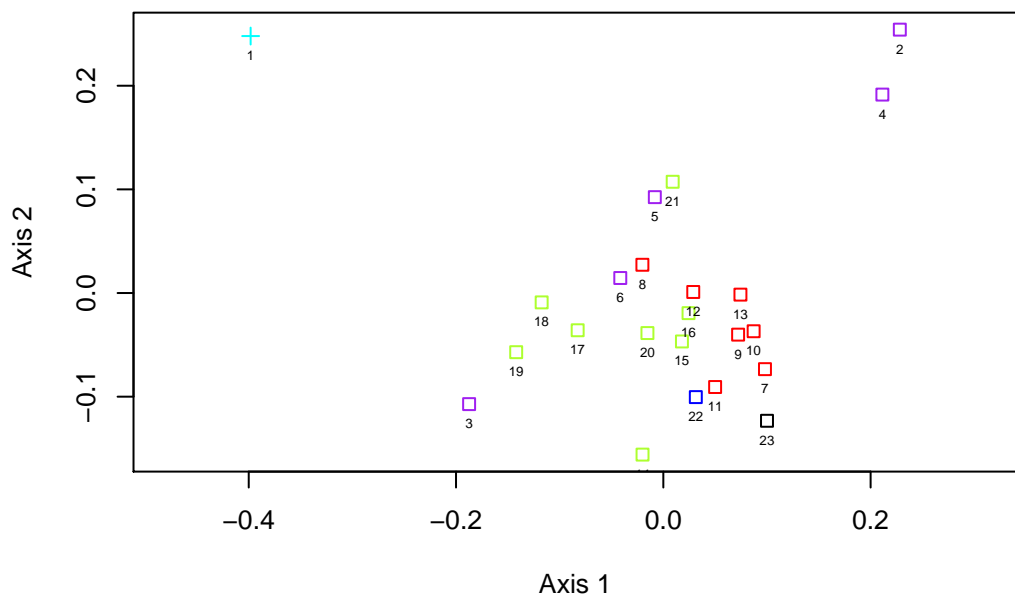
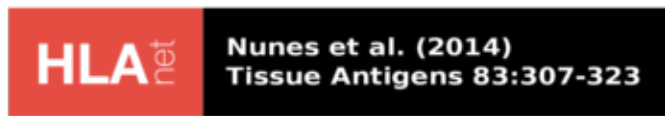
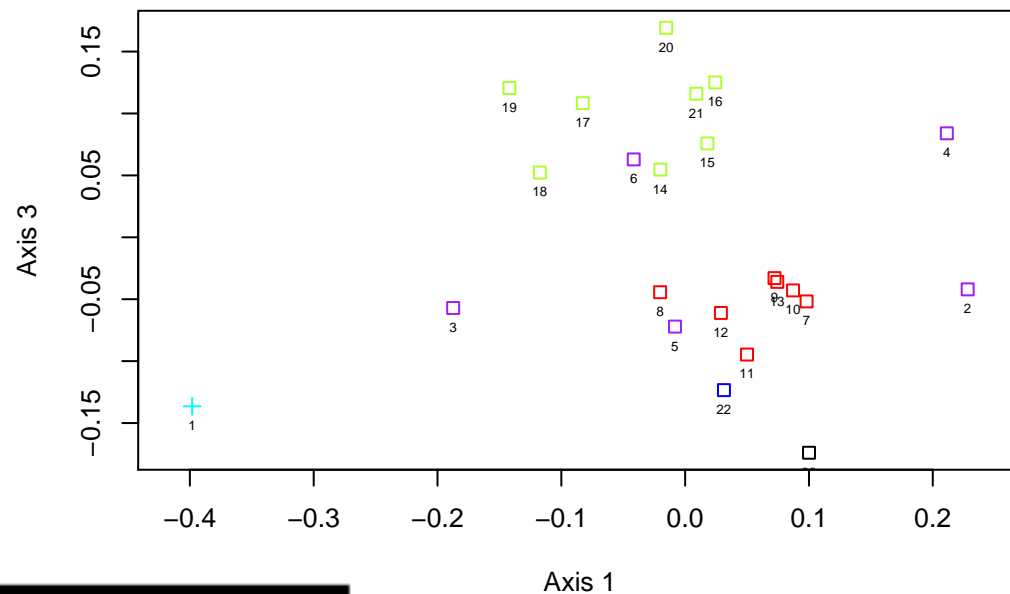
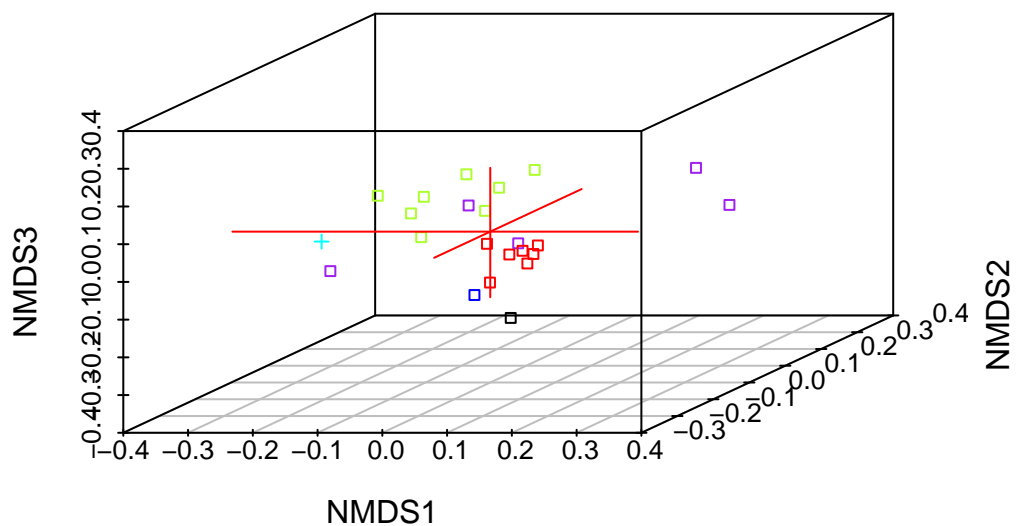


HLA-DQA1 data (stress=0.1174)

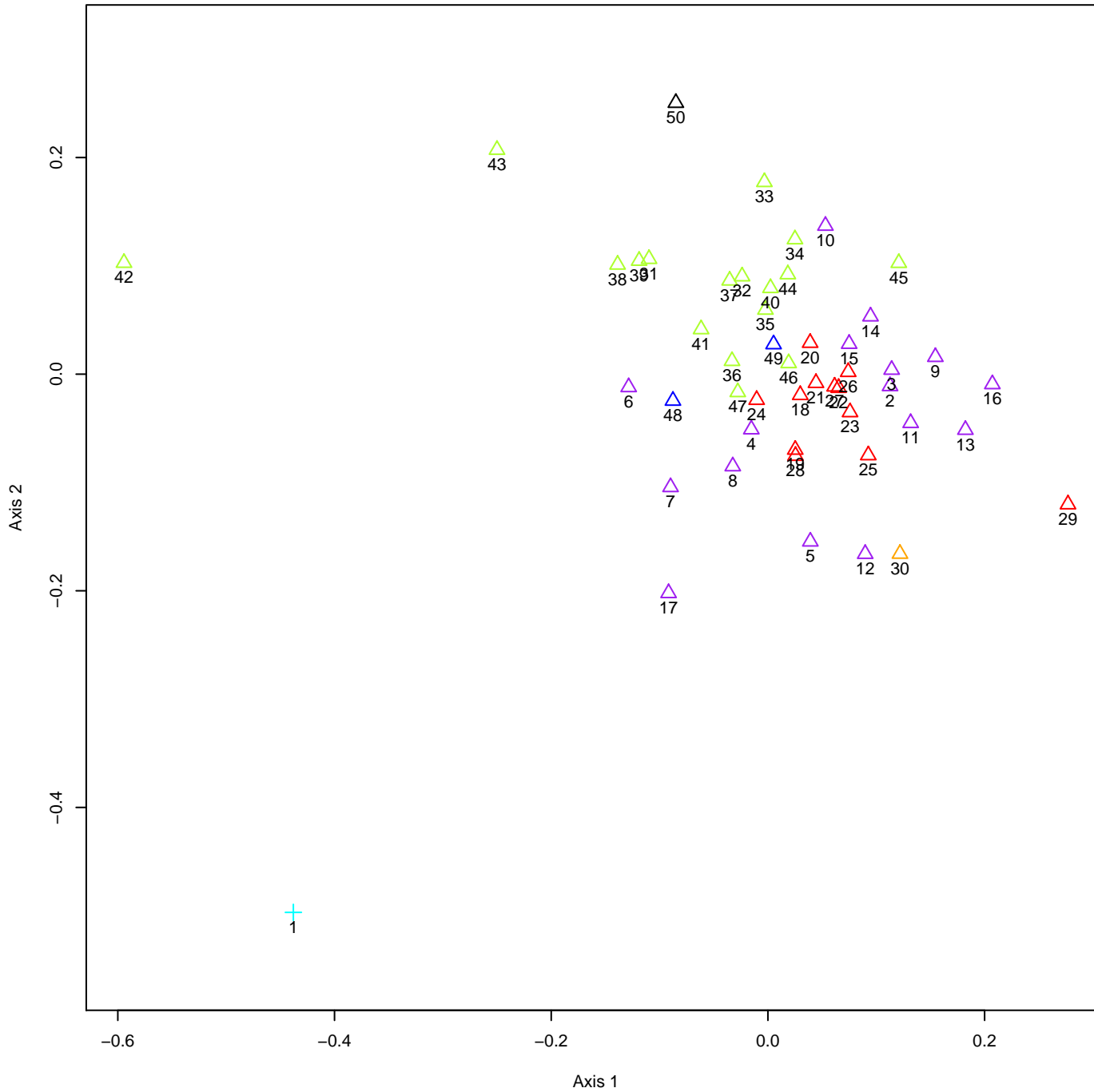


- 1 SouthAfricans [col] (N=108)
- 2 Chaouya [15WS.p2] (N=83)
- 3 Egyptian Copts [Other.psources] (N=40)
- 4 Metalsa [15WS.p13] (N=89)
- 5 Moroccans [13WS.p20] (N=98)
- 6 Tunisians [Other.psources] (N=97)
- 7 Belgians [12WS.p158] (N=40)
- 8 Czechs [13WS.p32] (N=105)
- 9 French [12WS.p229] (N=224)
- 10 Polish [12WS.p156] (N=99)
- 11 Portuguese [12WS.p65] (N=111)
- 12 Spanish [12WS.p104] (N=100)
- 13 Spanish [12WS.p82] (N=125)
- 14 Croatians [12WS.p19] (N=104)
- 15 Croatians [12WS.p20] (N=106)
- 16 Greeks [12WS.p165] (N=96)
- 17 Italians [12WS.p42] (N=93)
- 18 Italians [12WS.p45] (N=99)
- 19 Pomaki [12WS.p164] (N=100)
- 20 Sardinians [12WS.p46] (N=80)
- 21 Slovenians [13WS.p36] (N=100)
- 22 Punjabi [12WS.p38] (N=51)
- 23 Czech Gypsies [12WS.p23] (N=33)

3D stress= 0.06836



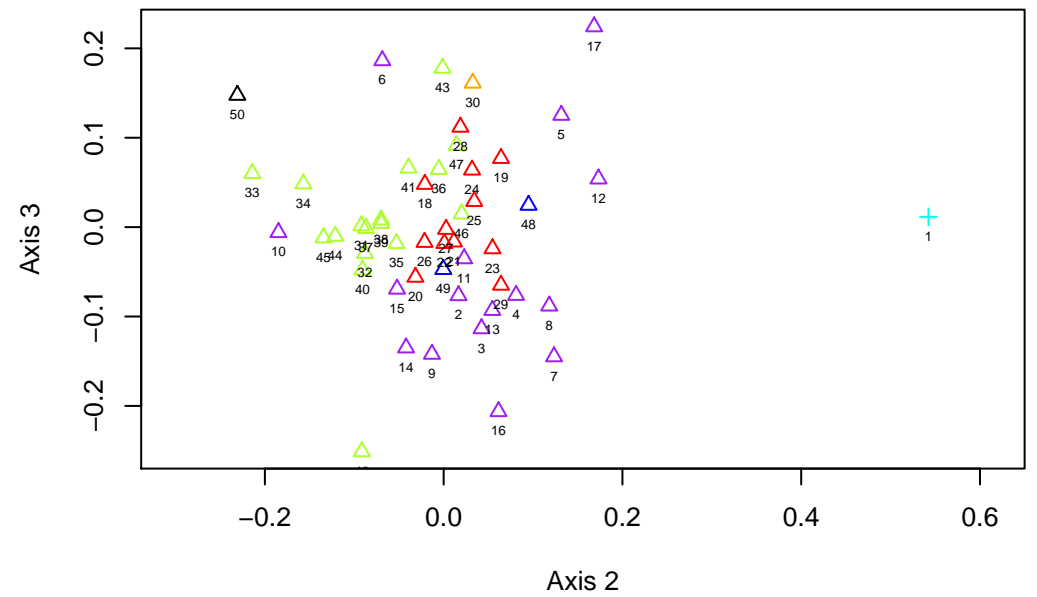
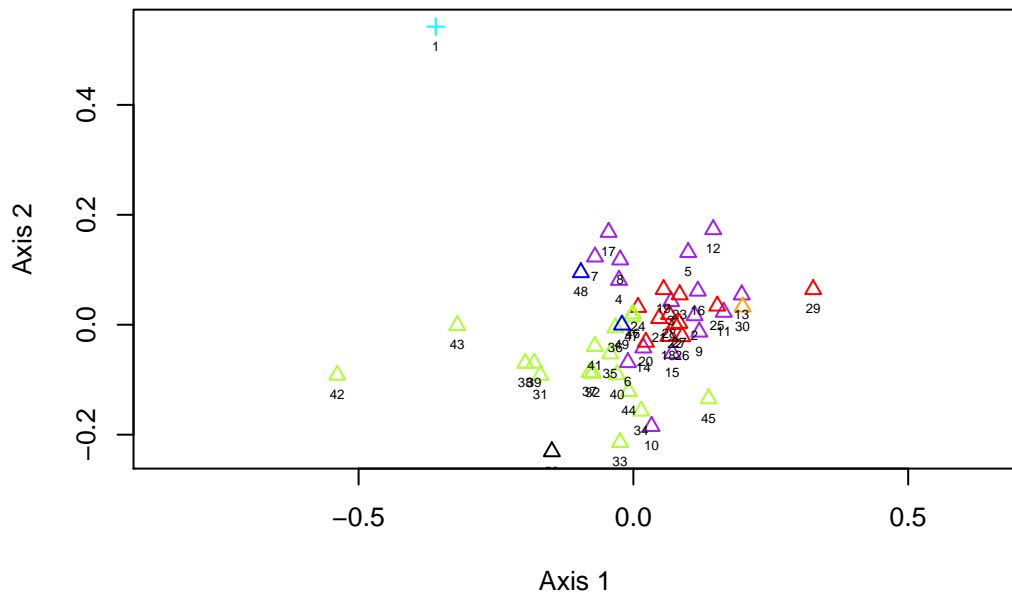
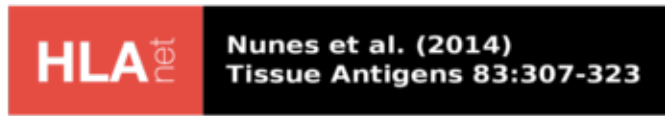
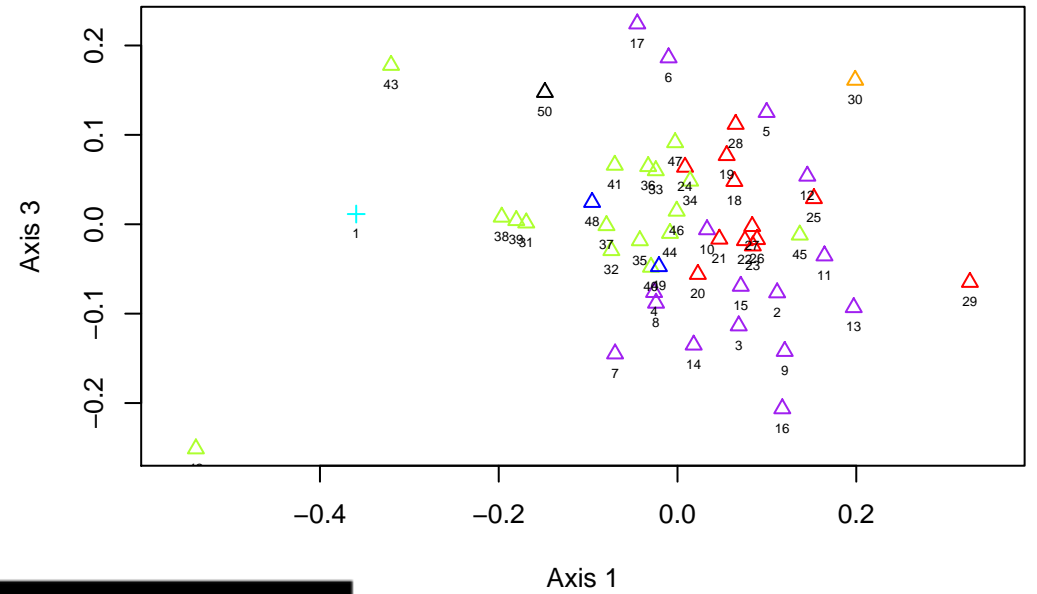
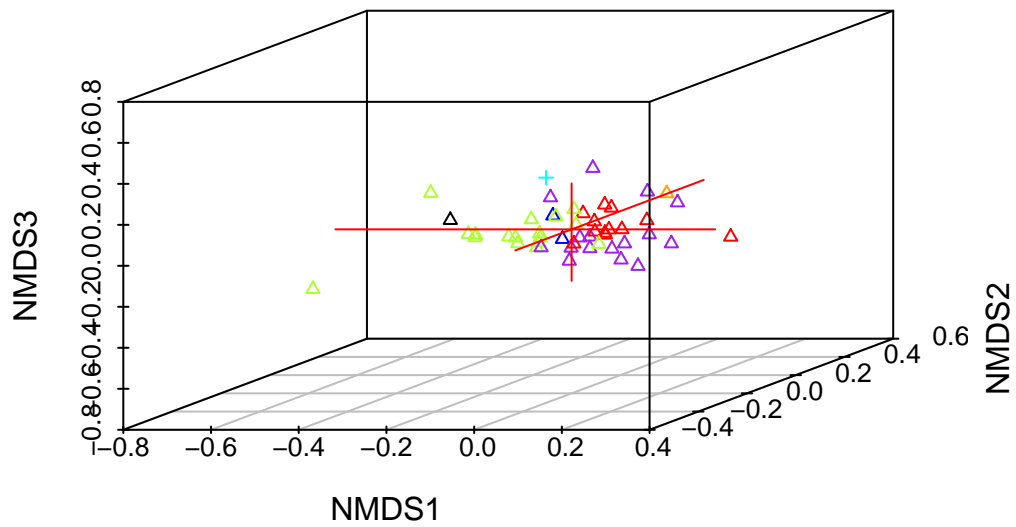
HLA-DQB1 data (stress=0.1659)



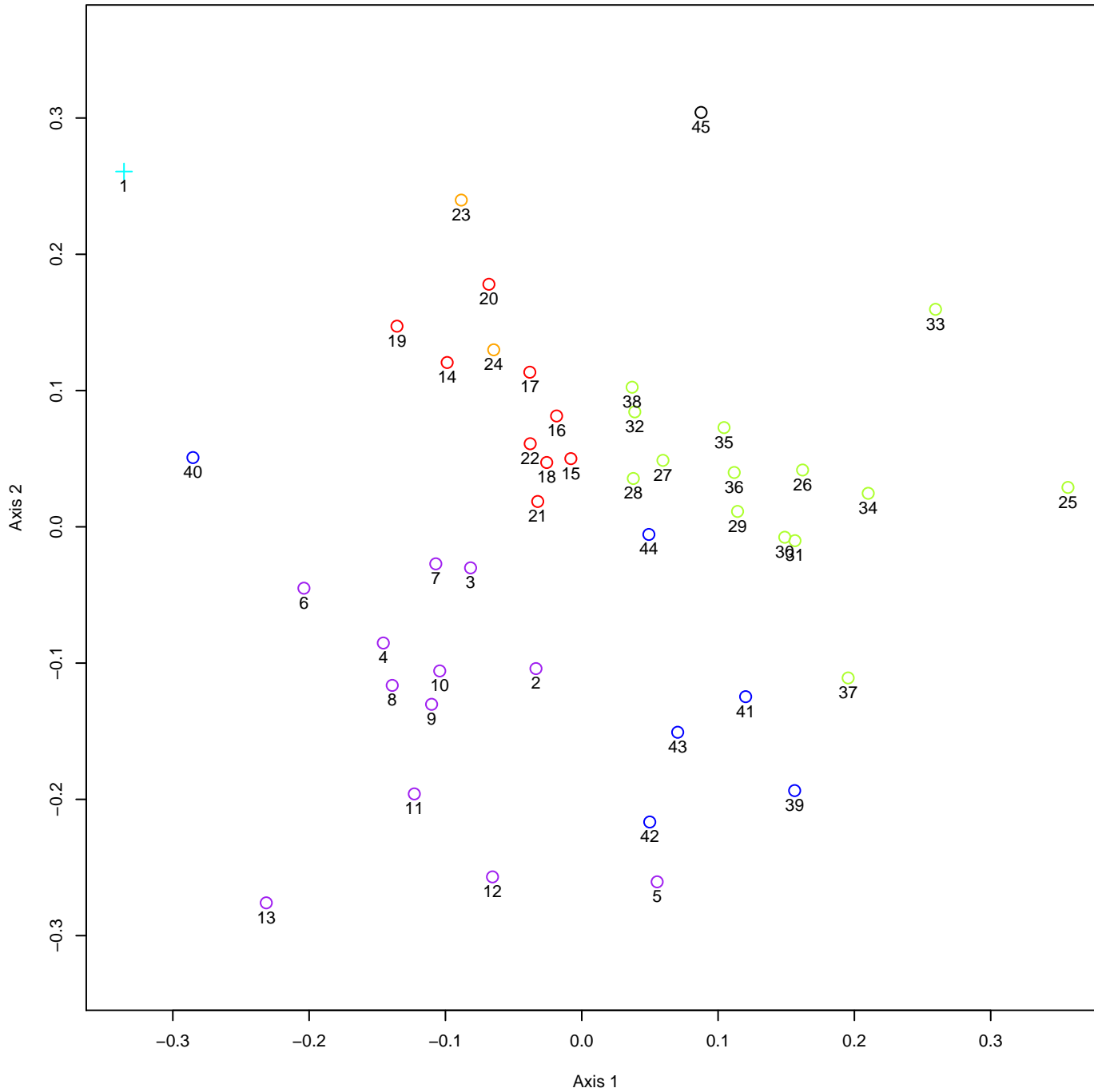
- NE-EUR
- CW-EUR
- SE-EUR
- WASI
- NAFR
- OTH
- USER

- 1 SouthAfricans [col] (N=631)
- 2 Algerians [12WS.p55] (N=100)
- 3 Algerians [13WS.p17] (N=99)
- 4 Bedouins [12WS.p171] (N=98)
- 5 Chaouya [15WS.p2] (N=82)
- 6 Egyptian Copts [Other.psources] (N=40)
- 7 Egyptians Delta [Other.psources] (N=101)
- 8 Egyptians South [Other.psources] (N=94)
- 9 Gabes [Other.psources] (N=96)
- 10 Jerba [Other.psources] (N=55)
- 11 Matmata [Other.psources] (N=81)
- 12 Metalsa [15WS.p13] (N=96)
- 13 Moroccans [13WS.p20] (N=98)
- 14 Mzab [Other.psources] (N=107)
- 15 Sudanese [16WS.p35] (N=230)
- 16 Tunisians Sened [15WS.p3] (N=52)
- 17 Tunisians Tataouine [15WS.p4] (N=52)
- 18 Belgians [12WS.p158] (N=40)
- 19 British Wales [16WS.p27] (N=1000)
- 20 Czechs [12WS.p22] (N=35)
- 21 Czechs [13WS.p32] (N=106)
- 22 French [12WS.p229] (N=224)
- 23 French [12WS.p61] (N=234)
- 24 French Montpellier [16WS.p36] (N=1431)
- 25 Polish [12WS.p156] (N=99)
- 26 Portuguese [12WS.p195] (N=220)
- 27 Portuguese [12WS.p65] (N=111)
- 28 Spanish [12WS.p104] (N=100)
- 29 Spanish Basques [12WS.p120] (N=158)
- 30 Finns BMD [16WS.p39] (N=1528)
- 31 Albanians [15WS.p20] (N=152)
- 32 Bulgarians [12WS.p119] (N=120)
- 33 Croatians [12WS.p19] (N=102)
- 34 Croatians [12WS.p20] (N=104)
- 35 Croatians [12WS.p21] (N=139)
- 36 Croatians [16WS.p37] (N=202)
- 37 Greeks [12WS.p165] (N=96)
- 38 Greeks [15WS.p12] (N=144)
- 39 Greeks [16WS.p44] (N=232)
- 40 Italians [12WS.p42] (N=93)
- 41 Italians [12WS.p45] (N=98)
- 42 Kosovo Albanians [16WS.p52] (N=120)
- 43 Macedonians [15WS.p19] (N=218)
- 44 Pomaki [12WS.p164] (N=100)
- 45 Sardinians [12WS.p46] (N=80)
- 46 Slovenians [13WS.p36] (N=100)
- 47 Slovenians [16WS.p57 updated] (N=142)
- 48 Punjabi [12WS.p38] (N=42)
- 49 Turks [13WS.p65] (N=245)
- 50 Czech Gypsies [12WS.p23] (N=33)

3D stress= 0.1173



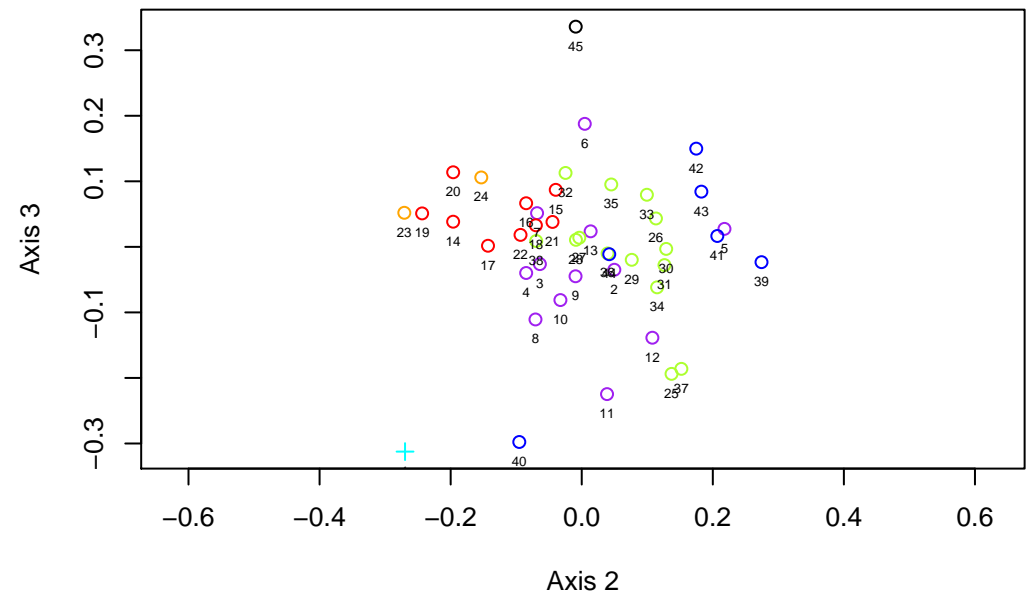
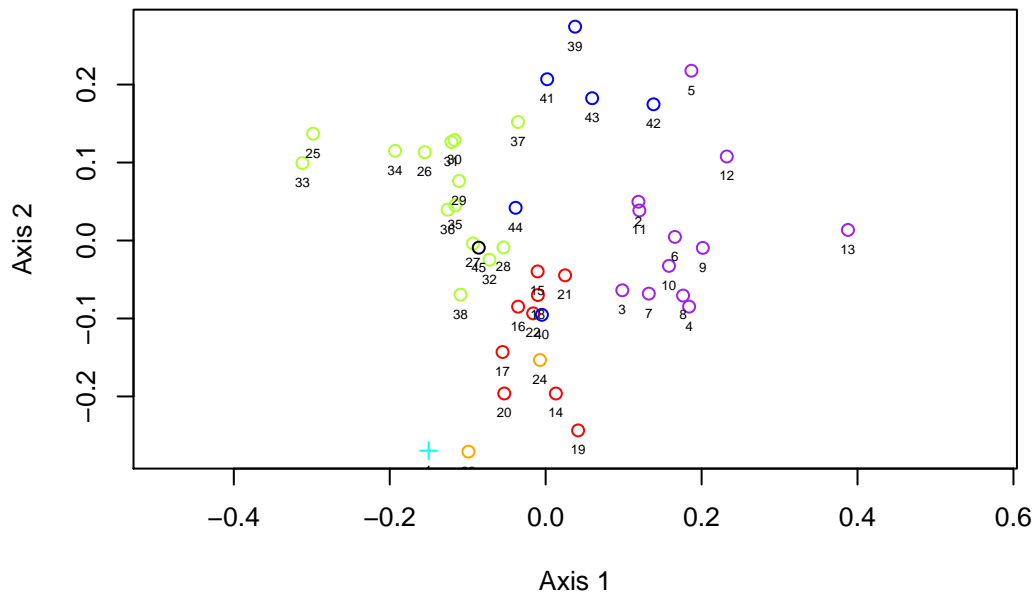
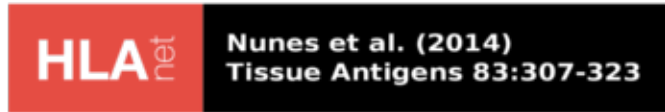
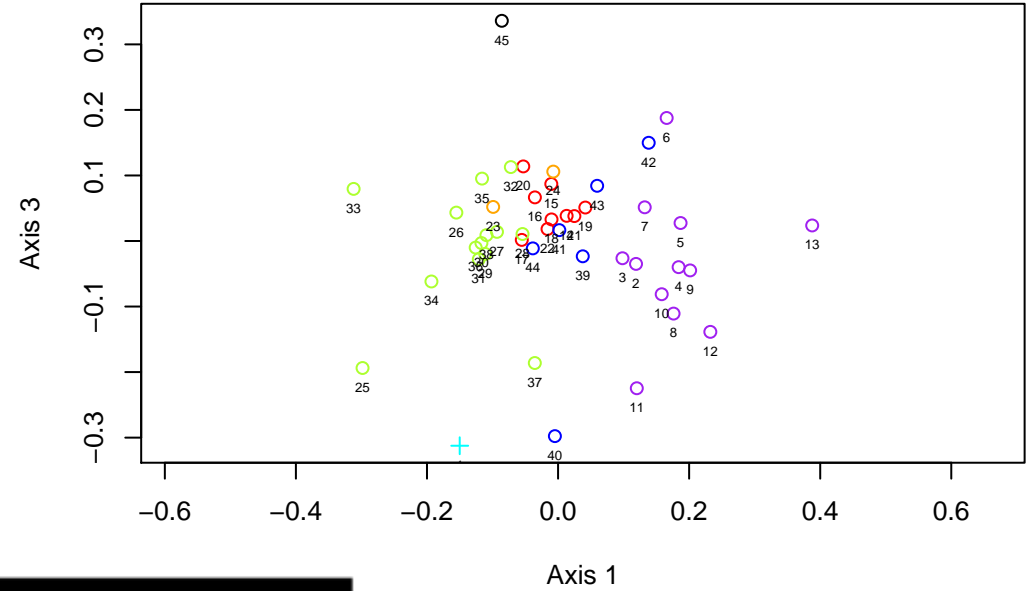
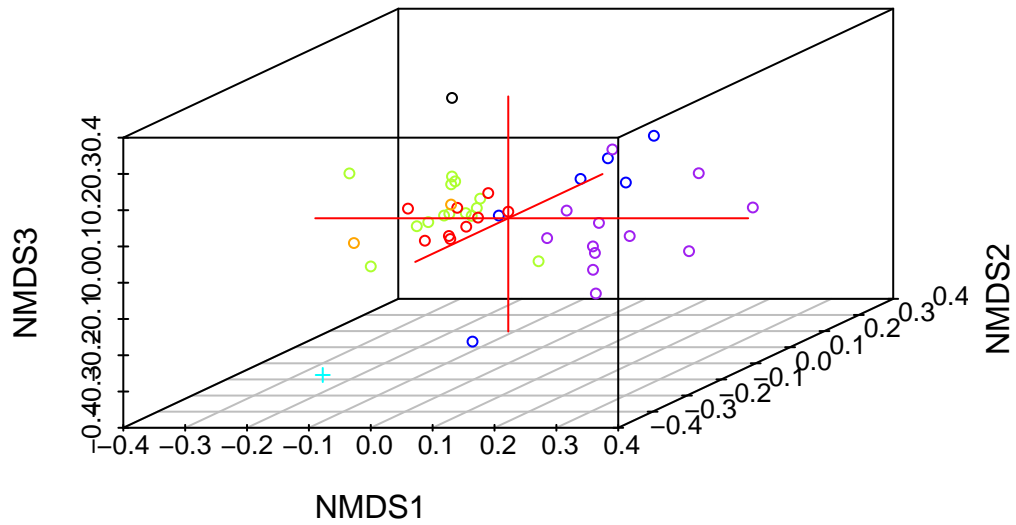
HLA-DRB1 data (stress=0.199)



- NE-EUR
- CW-EUR
- SE-EUR
- WASI
- NAFR
- OTH
- + USER

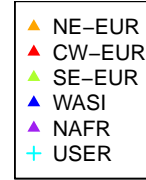
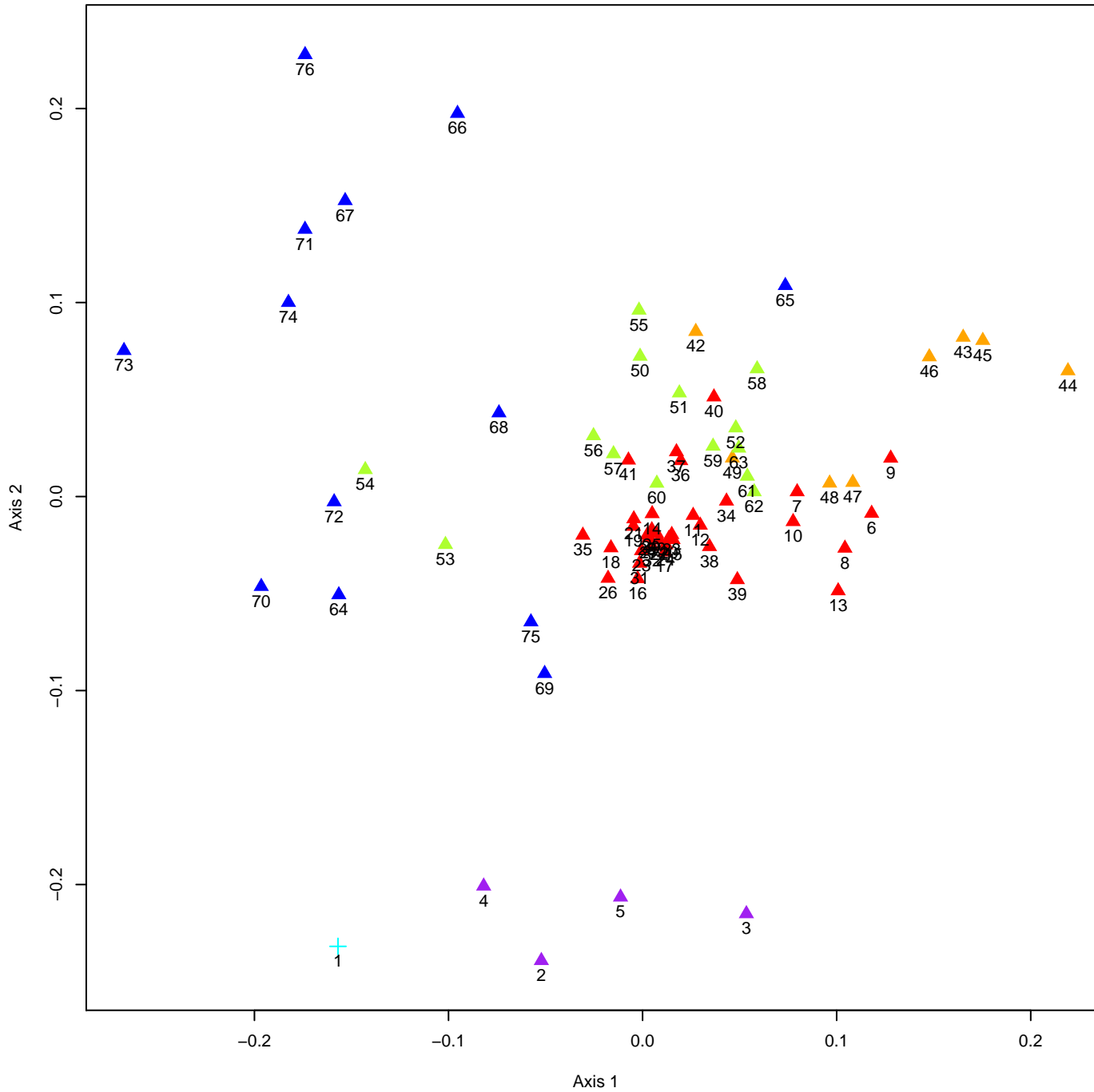
- 1 SouthAfricans [col] (N=2274)
- 2 Algerians [13WS.p17] (N=99)
- 3 Algerians Oran [15WS.p1] (N=97)
- 4 Chaouya [15WS.p2] (N=99)
- 5 Egyptian Copts [Other.psources] (N=40)
- 6 Jerba [Other.psources] (N=55)
- 7 Matmata [Other.psources] (N=81)
- 8 Metalsa [15WS.p13] (N=96)
- 9 Moroccans [13WS.p20] (N=98)
- 10 Moroccans [13WS.p21] (N=91)
- 11 Sudanese [16WS.p35] (N=230)
- 12 Tunisians Sened [15WS.p3] (N=52)
- 13 Tunisians Tataouine [15WS.p4] (N=52)
- 14 British Wales [16WS.p27] (N=1000)
- 15 Czechs [12WS.p22] (N=36)
- 16 Czechs [13WS.p32] (N=103)
- 17 French [12WS.p61] (N=234)
- 18 French Montpellier [16WS.p36] (N=3902)
- 19 Irish [13WS.p35] (N=1000)
- 20 Polish [12WS.p156] (N=98)
- 21 Spanish [12WS.p104] (N=100)
- 22 Spanish [12WS.p82] (N=72)
- 23 Finns [16WS.p42] (N=150)
- 24 Russians Vologda [16WS.p15] (N=108)
- 25 Albanians [15WS.p20] (N=158)
- 26 Croatians [12WS.p19] (N=104)
- 27 Croatians [12WS.p21] (N=139)
- 28 Croatians [16WS.p37] (N=202)
- 29 Greeks [12WS.p165] (N=192)
- 30 Greeks [15WS.p12] (N=144)
- 31 Greeks [16WS.p44] (N=232)
- 32 Italians [12WS.p45] (N=99)
- 33 Kosovo Albanians [16WS.p52] (N=120)
- 34 Macedonians [15WS.p19] (N=566)
- 35 Pomaki [12WS.p164] (N=100)
- 36 Romanians [12WS.p67] (N=99)
- 37 Sardinians [12WS.p46] (N=80)
- 38 Slovenians [13WS.p36] (N=100)
- 39 Ashkenazi Jews [12WS.p116] (N=40)
- 40 Indians Golla [13WS.p63] (N=109)
- 41 Libanese [12WS.p145] (N=258)
- 42 Libyan Jews [12WS.p153] (N=40)
- 43 Morrocan Jews [12WS.p117] (N=40)
- 44 Turks [13WS.p65] (N=245)
- 45 Czech Gypsies [12WS.p23] (N=33)

3D stress= 0.1313



Supplementary Figure 4.2 (Figure S4.2): Low resolution (two digit) NMDS global comparison South African HLA ~A, ~B, ~C, ~DRB1, ~DQA1, and ~DQB1 non metric multidimensional scaling analysis using gene[rate] tools⁴⁸.

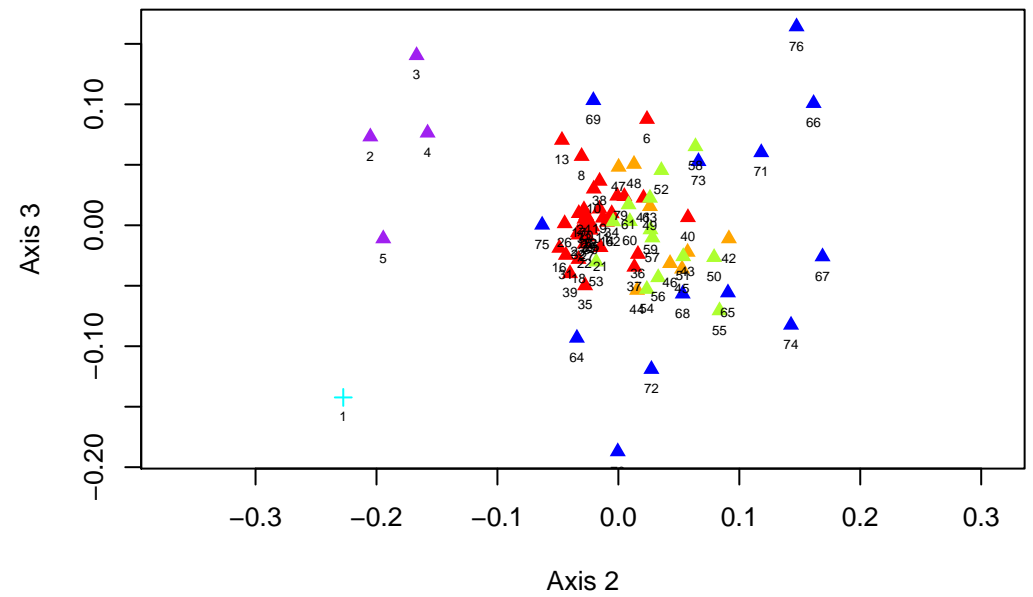
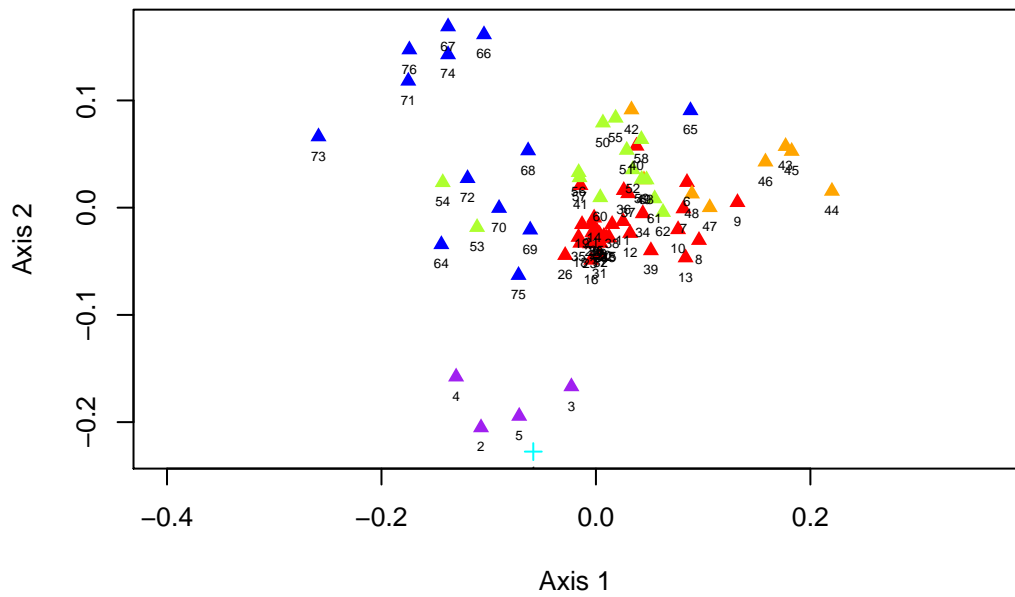
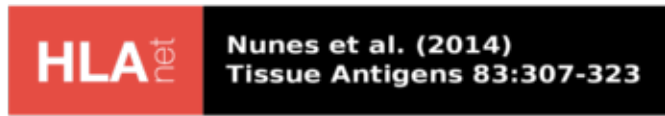
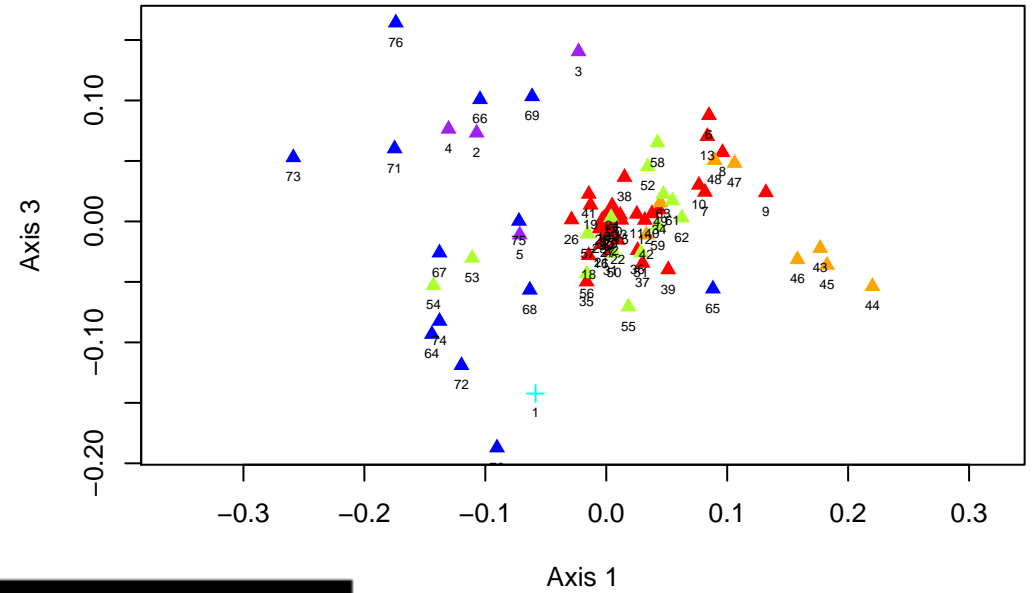
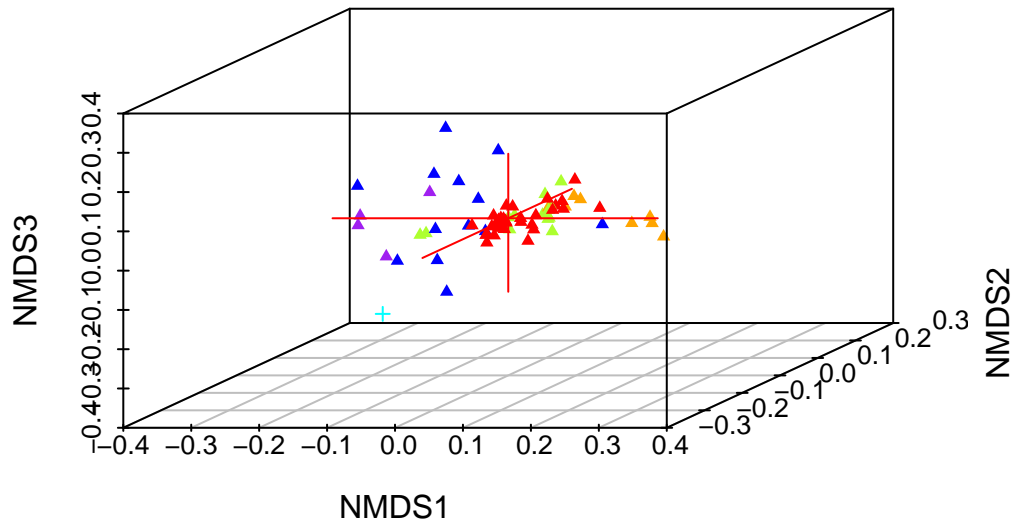
HLA-A data (stress=0.1397)



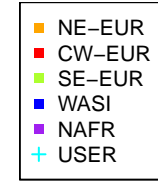
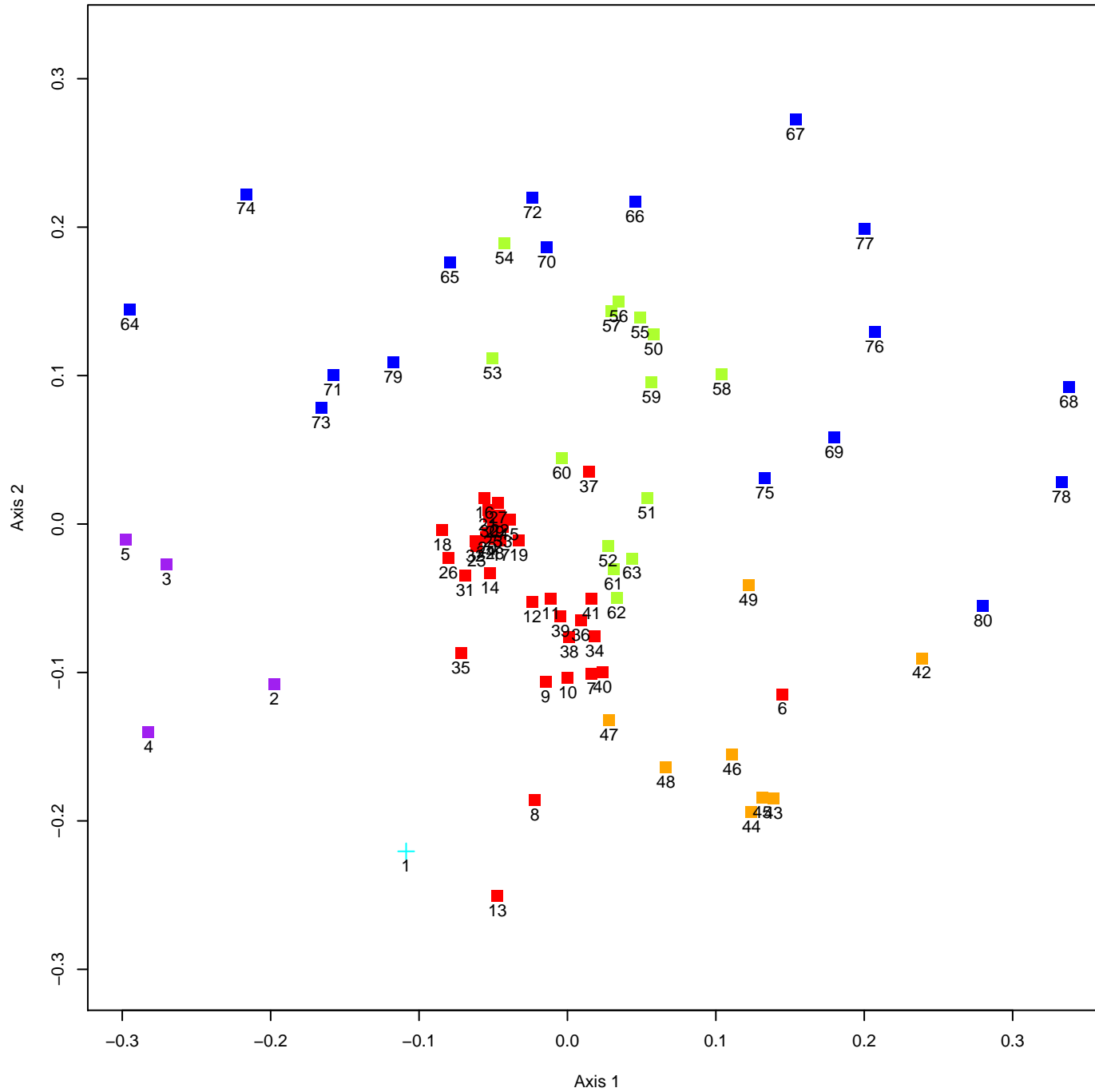
1 SouthAfricans [col] (N=40050)
2 Chaouya [15WS.p2] (N=74)
3 Egyptians [16WS.p3] (N=92)
4 Metalsa [15WS.p13] (N=71)
5 Sudanese [16WS.p35] (N=230)
6 Austrians Oetzal [15WS.p6] (N=57)
7 Austrians Vienna [15WS.p5] (N=200)
8 British Wales [16WS.p27] (N=1000)
9 Czechs [13WS.p32] (N=105)
10 Czechs [16WS.p41] (N=310)
11 French [16WS.p28 updated] (N=7868)
12 French Montpellier [16WS.p36] (N=4074)
13 Irish [13WS.p35] (N=999)
14 Portuguese Acores [HLA.pNET] (N=1050)
15 Portuguese Aveiro [HLA.pNET] (N=5933)
16 Portuguese Beja [HLA.pNET] (N=699)
17 Portuguese Braga [HLA.pNET] (N=1971)
18 Portuguese Braganca [HLA.pNET] (N=301)
19 Portuguese C Branco [HLA.pNET] (N=327)
20 Portuguese Coimbra [HLA.pNET] (N=5057)
21 Portuguese Evora [HLA.pNET] (N=737)
22 Portuguese Faro [HLA.pNET] (N=1242)
23 Portuguese Guarda [HLA.pNET] (N=797)
24 Portuguese Leiria [HLA.pNET] (N=1847)
25 Portuguese Lisboa [HLA.pNET] (N=17420)
26 Portuguese Madeira [HLA.pNET] (N=538)
27 Portuguese Portalegre [HLA.pNET] (N=1254)
28 Portuguese Porto [HLA.pNET] (N=7937)
29 Portuguese Santarem [HLA.pNET] (N=3865)
30 Portuguese Setubal [HLA.pNET] (N=5267)
31 Portuguese V Castelo [HLA.pNET] (N=706)
32 Portuguese Vila Real [HLA.pNET] (N=1167)
33 Portuguese Viseu [HLA.pNET] (N=2915)
34 Swiss BMD BE [16WS] (N=720)
35 Swiss BMD GE [16WS] (N=105)
36 Swiss BMD GR [16WS] (N=231)
37 Swiss BMD LG [16WS] (N=125)
38 Swiss BMD LS [16WS] (N=366)
39 Swiss BMD LU [16WS] (N=153)
40 Swiss BMD SG [16WS] (N=111)
41 Swiss BMD SI [16WS] (N=155)
42 Bashkirs [16WS.p55] (N=146)
43 Finns [13WS.p33] (N=90)
44 Finns [16WS.p42] (N=150)
45 Finns BMD [16WS.p39] (N=3400)
46 Finns CB [16WS.p38] (N=1005)
47 Russians [16WS.p53] (N=207)
48 Russians Vologda [16WS.p15] (N=108)
49 Tatars [16WS.p54] (N=135)
50 Albanians [15WS.p20] (N=160)
51 Croatians [13WS.p31] (N=150)
52 Croatians [16WS.p37] (N=202)
53 Cypriots [16WS.p46] (N=2297)
54 Greek Cypriots [12WS.p166] (N=101)
55 Greeks [12WS.p34] (N=85)

56 Greeks [15WS.p12] (N=144)
57 Greeks [16WS.p44] (N=232)
58 Kosovo Albanians [16WS.p52] (N=120)
59 Macedonians [15WS.p19] (N=247)
60 Northern Italians [16WS.p45] (N=5108)
61 Slovenian Donors [16WS.p58] (N=13787)
62 Slovenians [16WS.p57 updated] (N=143)
63 Slovenians CB [16WS.p59] (N=247)
64 Druzes [13WS.p58] (N=100)
65 Georgians [13WS.p34] (N=105)
66 Indians Golla [13WS.p63] (N=88)
67 Indians New Dehli [13WS.p61] (N=66)
68 Iraqi Kurdistan [16WS.p2] (N=404)
69 Israeli Jews [13WS.p59] (N=117)
70 Kurdish [13WS.p60] (N=30)
71 Northern Indians [16WS.p43] (N=327)
72 Omani [13WS.p62] (N=119)
73 Pathans [12WS.p219] (N=36)
74 Sindhi [12WS.p213] (N=39)
75 Syrians [16WS.p1] (N=164)
76 Tamil [13WS.p64] (N=50)

3D stress= 0.0957



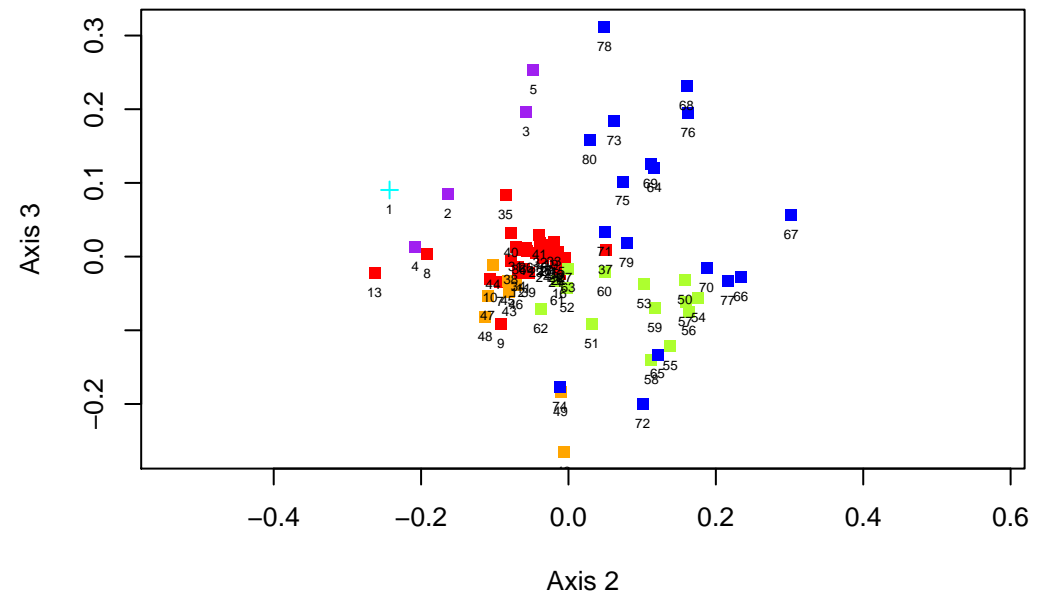
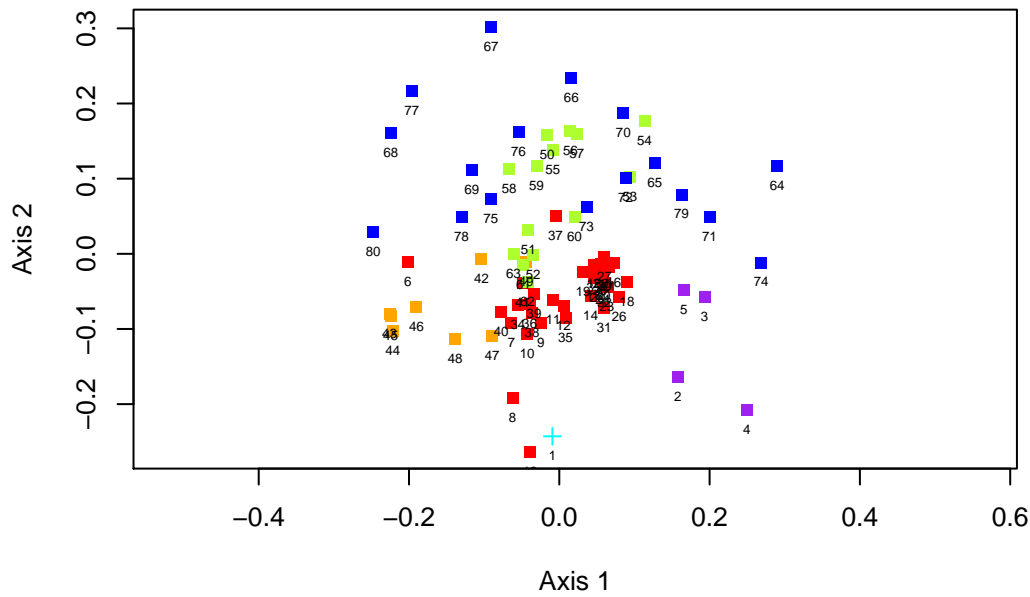
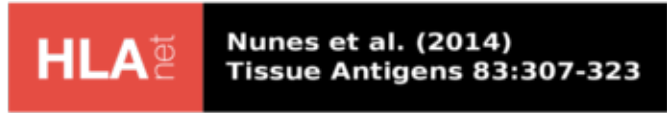
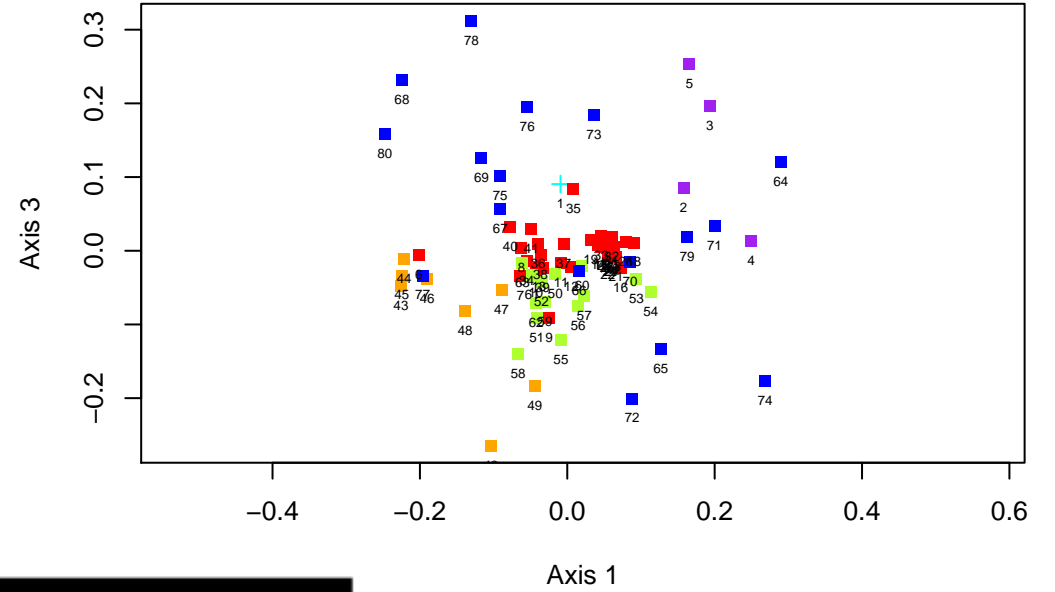
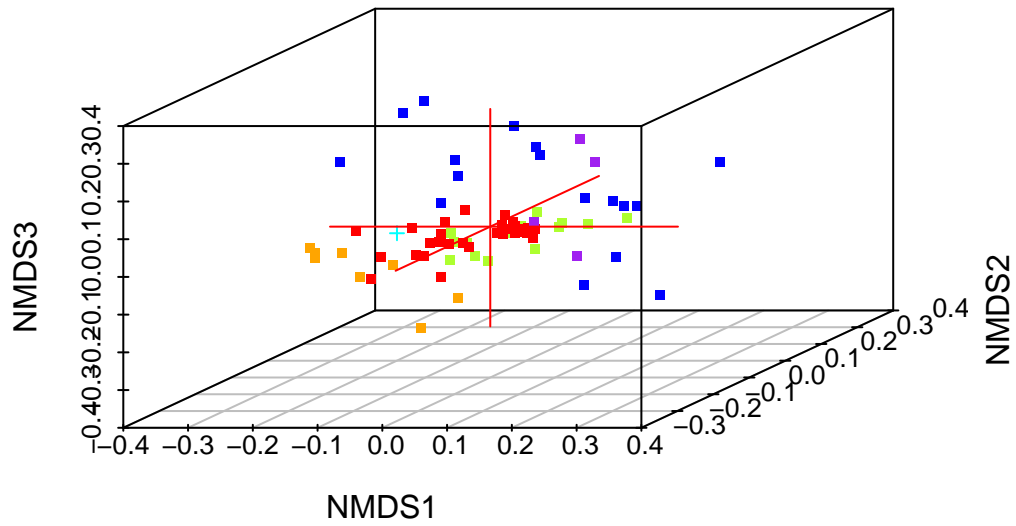
HLA-B data (stress=0.1882)



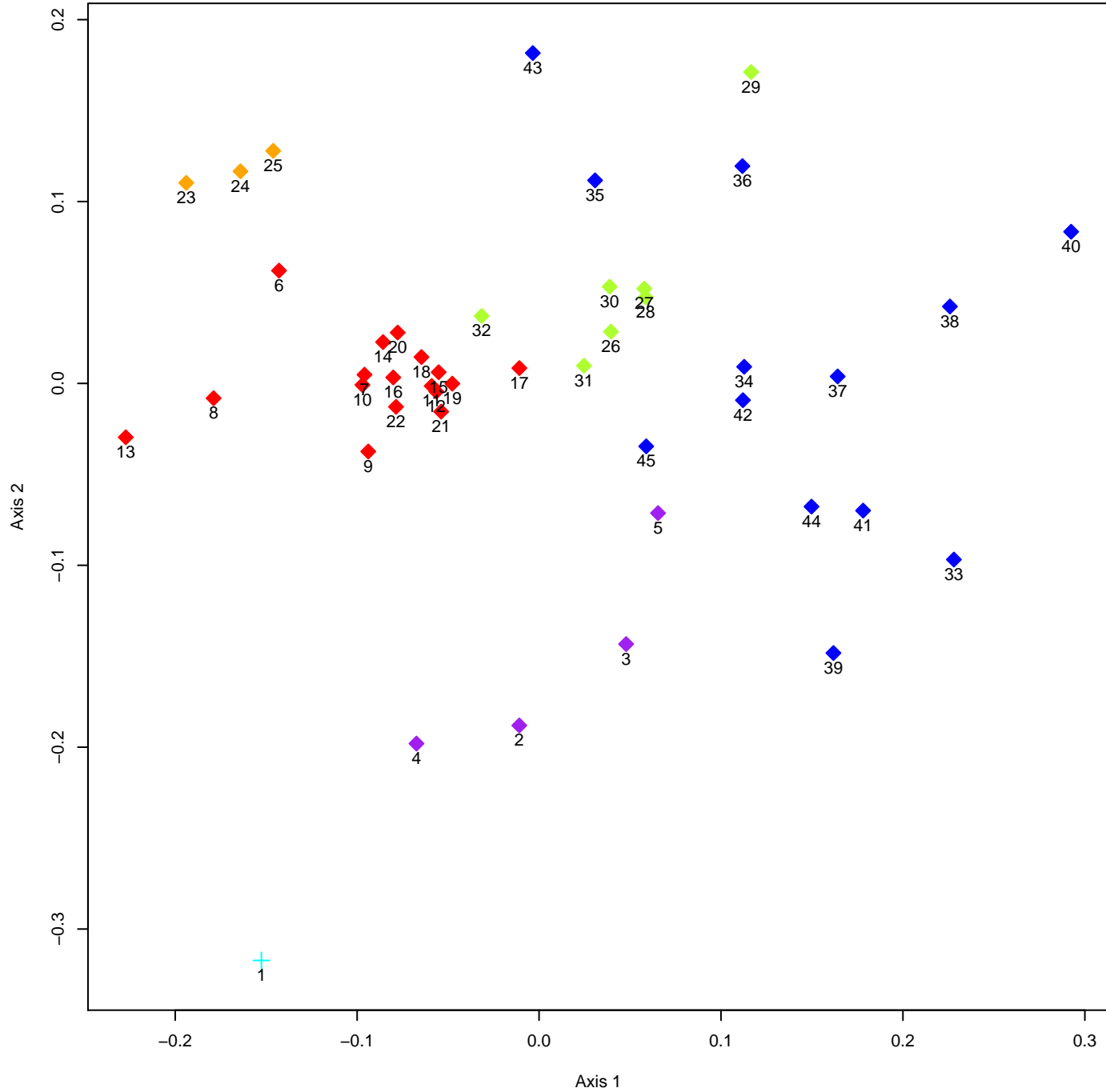
1 SouthAfricans [col] (N=37701)
2 Chaouya [15WS.p2] (N=73)
3 Egyptians [16WS.p3] (N=92)
4 Metalsa [15WS.p13] (N=68)
5 Sudanese [16WS.p35] (N=230)
6 Austrians Oetzal [15WS.p6] (N=57)
7 Austrians Vienna [15WS.p5] (N=200)
8 British Wales [16WS.p27] (N=1000)
9 Czechs [13WS.p32] (N=106)
10 Czechs [16WS.p41] (N=310)
11 French [16WS.p28 updated] (N=7868)
12 French Montpellier [16WS.p36] (N=4086)
13 Irish [13WS.p35] (N=1000)
14 Portuguese Acores [HLA.pNET] (N=1050)
15 Portuguese Aveiro [HLA.pNET] (N=5933)
16 Portuguese Beja [HLA.pNET] (N=699)
17 Portuguese Braga [HLA.pNET] (N=1971)
18 Portuguese Braganca [HLA.pNET] (N=301)
19 Portuguese C Branco [HLA.pNET] (N=327)
20 Portuguese Coimbra [HLA.pNET] (N=5057)
21 Portuguese Evora [HLA.pNET] (N=737)
22 Portuguese Faro [HLA.pNET] (N=1242)
23 Portuguese Guarda [HLA.pNET] (N=797)
24 Portuguese Leiria [HLA.pNET] (N=1847)
25 Portuguese Lisboa [HLA.pNET] (N=17420)
26 Portuguese Madeira [HLA.pNET] (N=538)
27 Portuguese Portalegre [HLA.pNET] (N=1254)
28 Portuguese Porto [HLA.pNET] (N=7937)
29 Portuguese Santarem [HLA.pNET] (N=3865)
30 Portuguese Setubal [HLA.pNET] (N=5268)
31 Portuguese V Castelo [HLA.pNET] (N=706)
32 Portuguese Vila Real [HLA.pNET] (N=1167)
33 Portuguese Viseu [HLA.pNET] (N=2915)
34 Swiss BMD BE [16WS] (N=777)
35 Swiss BMD GE [16WS] (N=150)
36 Swiss BMD GR [16WS] (N=246)
37 Swiss BMD LG [16WS] (N=167)
38 Swiss BMD LS [16WS] (N=385)
39 Swiss BMD LU [16WS] (N=199)
40 Swiss BMD SG [16WS] (N=127)
41 Swiss BMD SI [16WS] (N=153)
42 Bashkirs [16WS.p55] (N=146)
43 Finns [13WS.p33] (N=90)
44 Finns [16WS.p42] (N=150)
45 Finns BMD [16WS.p39] (N=3433)
46 Finns CB [16WS.p38] (N=1005)
47 Russians [16WS.p53] (N=207)
48 Russians Vologda [16WS.p15] (N=108)
49 Tatars [16WS.p54] (N=135)
50 Albanians [15WS.p20] (N=160)
51 Croatians [13WS.p31] (N=150)
52 Croatians [16WS.p37] (N=202)
53 Cypriots [16WS.p46] (N=2333)
54 Greek Cypriots [12WS.p166] (N=95)
55 Greeks [12WS.p34] (N=83)

56 Greeks [15WS.p12] (N=144)
57 Greeks [16WS.p44] (N=232)
58 Kosovo Albanians [16WS.p52] (N=120)
59 Macedonians [15WS.p19] (N=247)
60 Northern Italians [16WS.p45] (N=5121)
61 Slovenian Donors [16WS.p58] (N=13787)
62 Slovenians [16WS.p57 updated] (N=143)
63 Slovenians CB [16WS.p59] (N=247)
64 Ashkenazi Jews [12WS.p116] (N=40)
65 Druzes [13WS.p58] (N=100)
66 Georgians [13WS.p34] (N=107)
67 Hunza Burushaski [12WS.p214] (N=46)
68 Indians Golla [13WS.p63] (N=104)
69 Indians New Dehli [13WS.p61] (N=66)
70 Iraqi Kurdistan [16WS.p2] (N=404)
71 Israeli Jews [13WS.p59] (N=109)
72 Kurdish [13WS.p60] (N=29)
73 Libyan Jews [12WS.p153] (N=40)
74 Moroccan Jews [12WS.p117] (N=40)
75 Northern Indians [16WS.p43] (N=327)
76 Omani [13WS.p62] (N=120)
77 Pathans [12WS.p219] (N=38)
78 Sindhi [12WS.p213] (N=39)
79 Syrians [16WS.p1] (N=164)
80 Tamil [13WS.p64] (N=49)

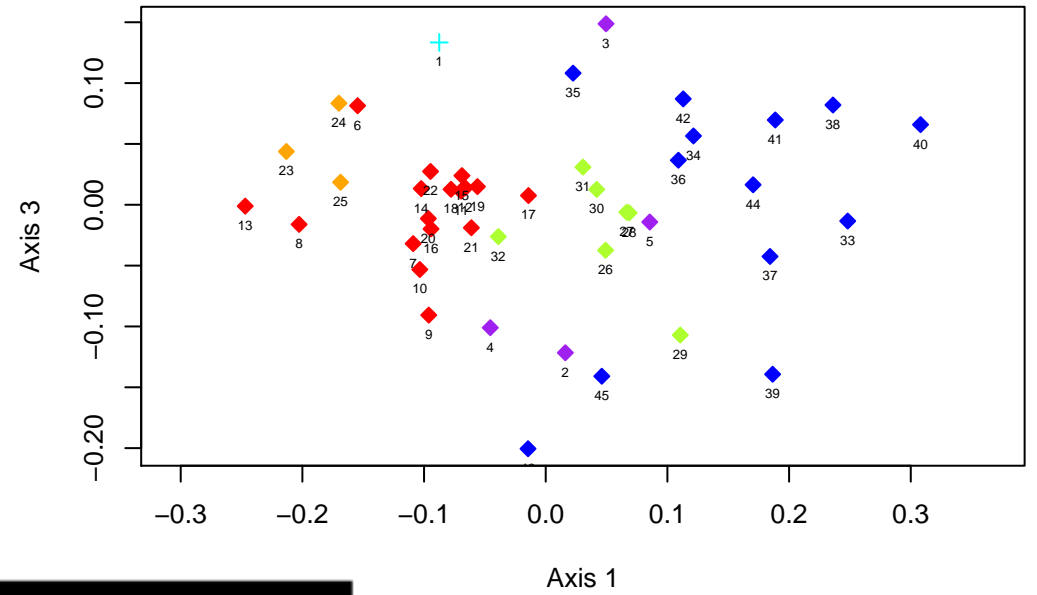
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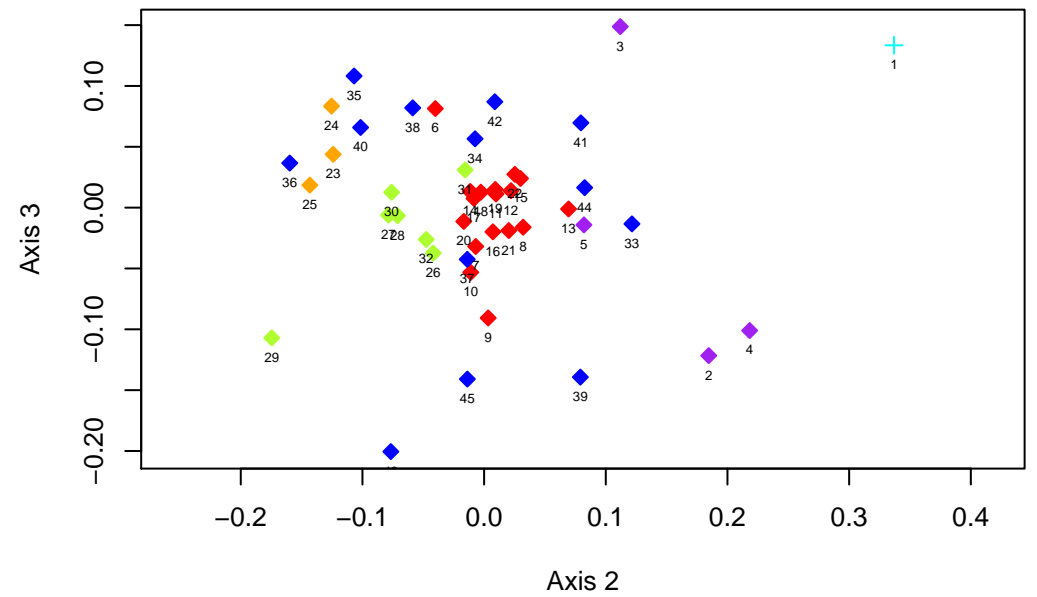
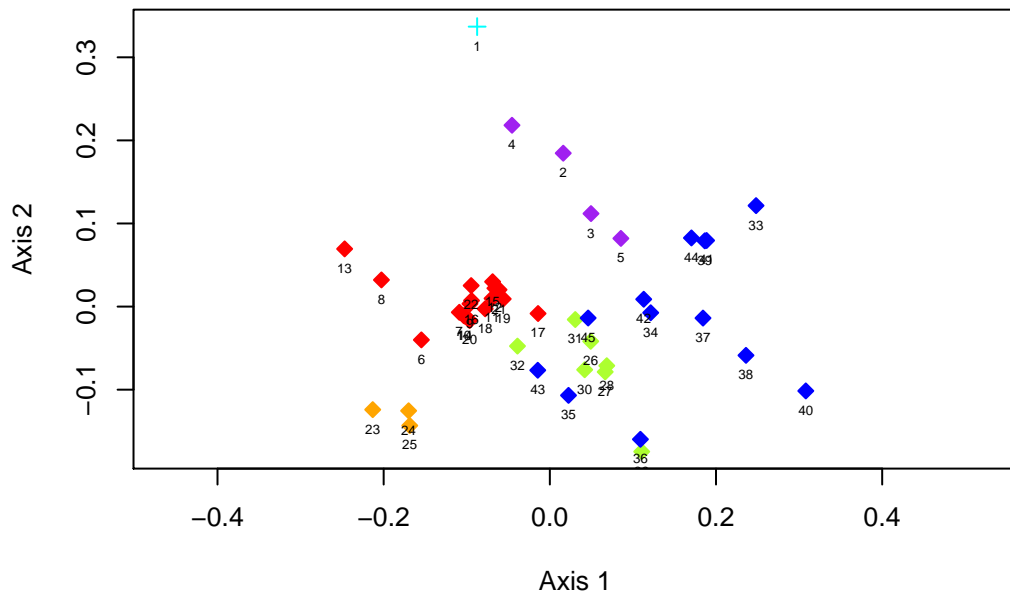
HLA-C data (stress=0.1507)



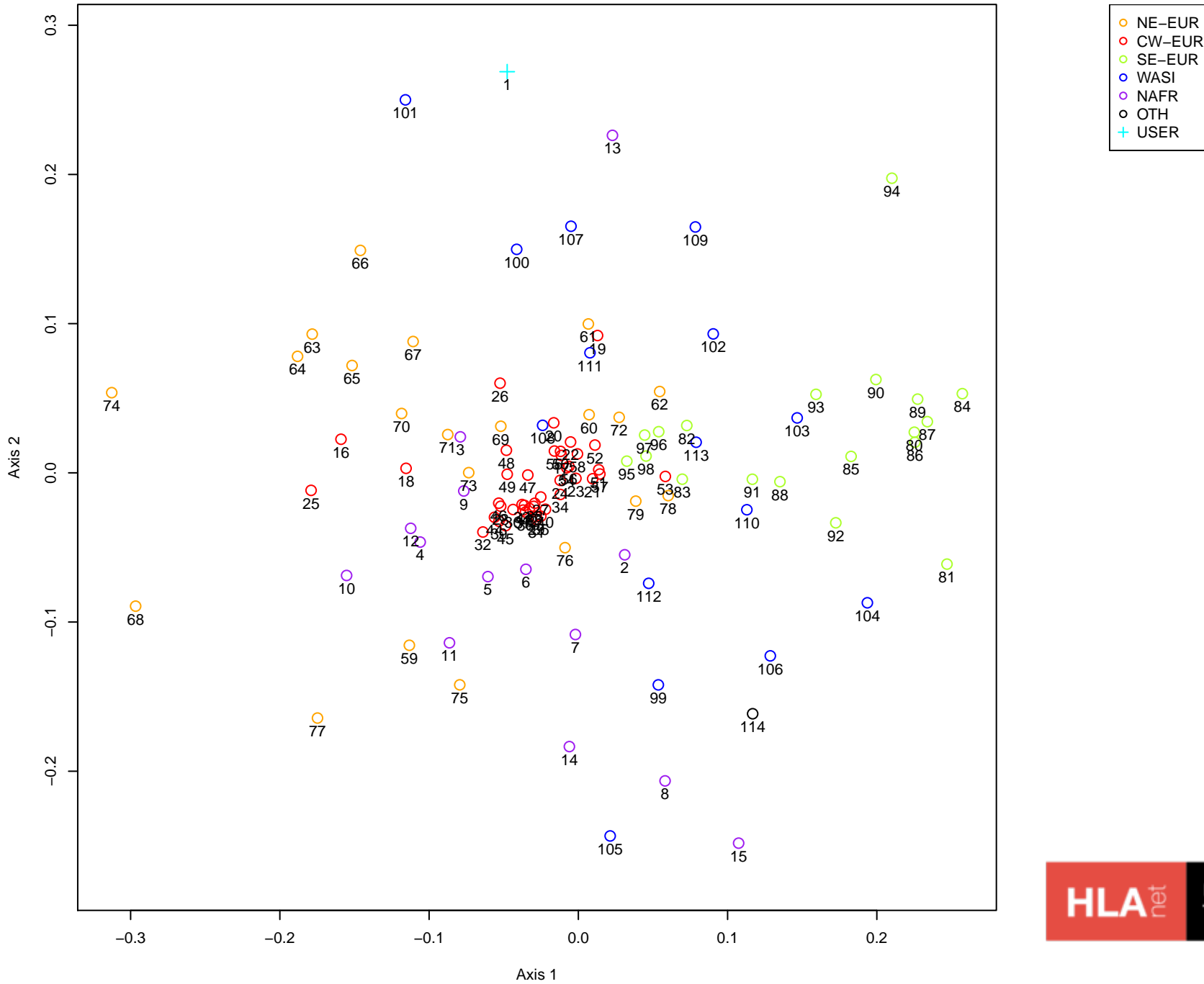
- 1 SouthAfricans [col] (N=10978)
- 2 Chaouya [15WS.p2] (N=72)
- 3 Egyptians [16WS.p3] (N=44)
- 4 Metalsa [15WS.p13] (N=63)
- 5 Sudanese [16WS.p35] (N=230)
- 6 Austrians Oetzal [15WS.p6] (N=57)
- 7 Austrians Vienna [15WS.p5] (N=200)
- 8 British Wales [16WS.p27] (N=1000)
- 9 Czechs [13WS.p32] (N=105)
- 10 Czechs [16WS.p41] (N=309)
- 11 French [16WS.p28 updated] (N=7868)
- 12 French Montpellier [16WS.p36] (N=2647)
- 13 Irish [13WS.p35] (N=1000)
- 14 Swiss BMD BE [16WS] (N=751)
- 15 Swiss BMD GE [16WS] (N=200)
- 16 Swiss BMD GR [16WS] (N=209)
- 17 Swiss BMD LG [16WS] (N=218)
- 18 Swiss BMD LS [16WS] (N=154)
- 19 Swiss BMD LU [16WS] (N=292)
- 20 Swiss BMD SG [16WS] (N=316)
- 21 Swiss BMD SI [16WS] (N=101)
- 22 Swiss panel4000 [AGP.pPhDSB] (N=99)
- 23 Finns [13WS.p33] (N=90)
- 24 Finns BMD [16WS.p39] (N=1601)
- 25 Finns CB [16WS.p38] (N=64)
- 26 Albanians [15WS.p20] (N=145)
- 27 Greeks [15WS.p12] (N=144)
- 28 Greeks [16WS.p44] (N=232)
- 29 Kosovo Albanians [16WS.p52] (N=120)
- 30 Macedonians [15WS.p19] (N=250)
- 31 Northern Italians [16WS.p45] (N=348)
- 32 Slovenians [16WS.p57 updated] (N=143)
- 33 Druzes [13WS.p58] (N=100)
- 34 Georgians [13WS.p34] (N=107)
- 35 Hunza Burushaski [12WS.p214] (N=46)
- 36 Indians New Dehli [13WS.p61] (N=56)
- 37 Iranians [AGP.pmasterSB] (N=120)
- 38 Iraqi Kurdistan [16WS.p2] (N=98)
- 39 Israeli Jews [13WS.p59] (N=94)
- 40 Kurdish [13WS.p60] (N=29)
- 41 Lebanese [AGP.pPhDSB] (N=97)
- 42 Pathans [12WS.p219] (N=38)
- 43 Sindhi [12WS.p213] (N=39)
- 44 Syrians [16WS.p1] (N=164)
- 45 Tamil [13WS.p64] (N=48)



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HLA-DRB1 data (stress=0.1971)

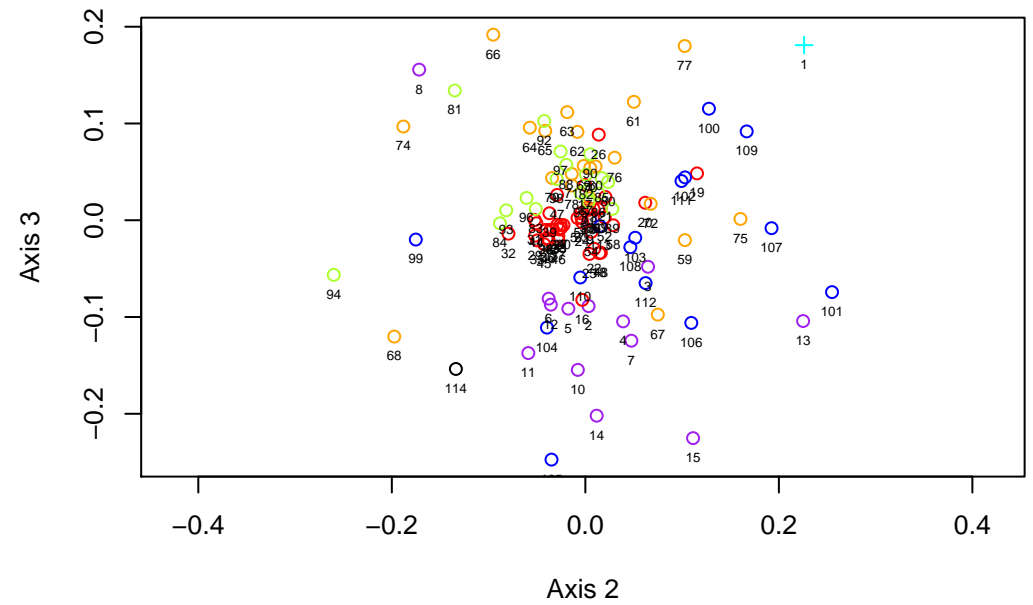
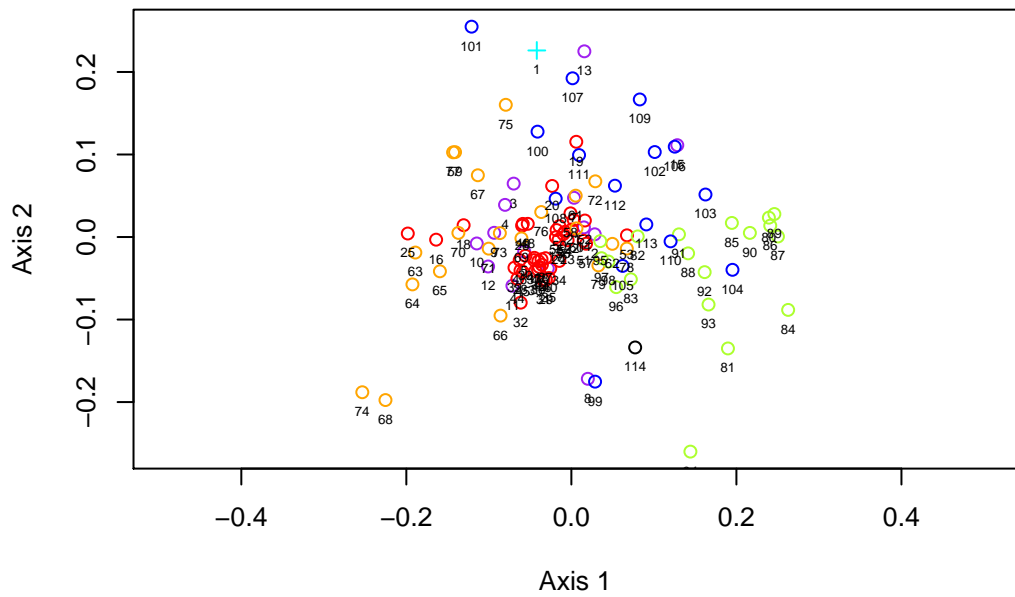
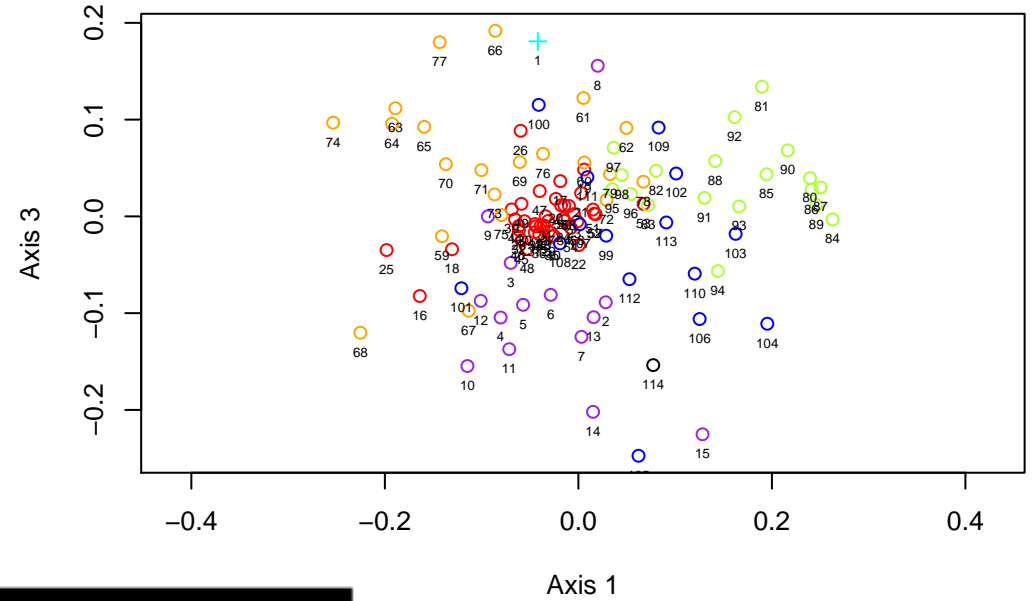
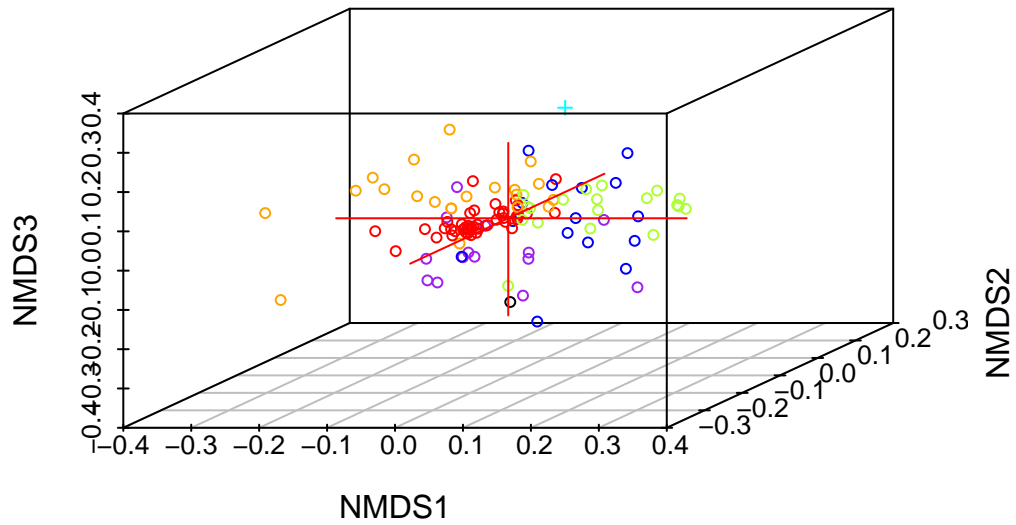


1 SouthAfricans [col] (N=25840)
2 Algerians [13WS.p17] (N=99)
3 Algerians Oran [15WS.p1] (N=97)
4 Chaouya [15WS.p2] (N=99)
5 Egyptian Copts [Other.psources] (N=40)
6 Egyptians [16WS.p3] (N=91)
7 Gabes [Other.psources] (N=96)
8 Jerba [Other.psources] (N=55)
9 Matmata [Other.psources] (N=81)
10 Metalsa [15WS.p13] (N=96)
11 Moroccans [13WS.p20] (N=98)
12 Moroccans [13WS.p21] (N=91)
13 Sudanese [16WS.p35] (N=230)
14 Tunisians Sened [15WS.p3] (N=52)
15 Tunisians Tataouine [15WS.p4] (N=52)
16 Austrians Oetzal [15WS.p6] (N=57)
17 Austrians Vienna [15WS.p5] (N=200)
18 British Wales [16WS.p27] (N=1000)
19 Czechs [12WS.p22] (N=36)
20 Czechs [13WS.p32] (N=103)
21 Czechs [16WS.p41] (N=310)
22 French [12WS.p61] (N=234)
23 French [16WS.p28 updated] (N=7868)
24 French Montpellier [16WS.p36] (N=3902)
25 Irish [13WS.p35] (N=1000)
26 Polish [12WS.p156] (N=98)
27 Portuguese Acores [HLA.pNET] (N=1050)
28 Portuguese Aveiro [HLA.pNET] (N=5933)
29 Portuguese Beja [HLA.pNET] (N=699)
30 Portuguese Braga [HLA.pNET] (N=1971)
31 Portuguese Braganca [HLA.pNET] (N=301)
32 Portuguese C Branco [HLA.pNET] (N=327)
33 Portuguese Coimbra [HLA.pNET] (N=5057)
34 Portuguese Evora [HLA.pNET] (N=737)
35 Portuguese Faro [HLA.pNET] (N=1242)
36 Portuguese Guarda [HLA.pNET] (N=797)
37 Portuguese Leiria [HLA.pNET] (N=1847)
38 Portuguese Lisboa [HLA.pNET] (N=17420)
39 Portuguese Madeira [HLA.pNET] (N=538)
40 Portuguese Portalegre [HLA.pNET] (N=1254)
41 Portuguese Porto [HLA.pNET] (N=7937)
42 Portuguese Santarem [HLA.pNET] (N=3865)
43 Portuguese Setubal [HLA.pNET] (N=5268)
44 Portuguese V Castelo [HLA.pNET] (N=706)
45 Portuguese Vila Real [HLA.pNET] (N=1167)
46 Portuguese Viseu [HLA.pNET] (N=2915)
47 Spanish [12WS.p104] (N=100)
48 Spanish [12WS.p82] (N=72)
49 Spanish [16WS.p48] (N=552)
50 Swiss BMD BE [16WS] (N=3545)
51 Swiss BMD GE [16WS] (N=1267)
52 Swiss BMD GR [16WS] (N=759)
53 Swiss BMD LG [16WS] (N=1169)
54 Swiss BMD LS [16WS] (N=993)
55 Swiss BMD LU [16WS] (N=1553)

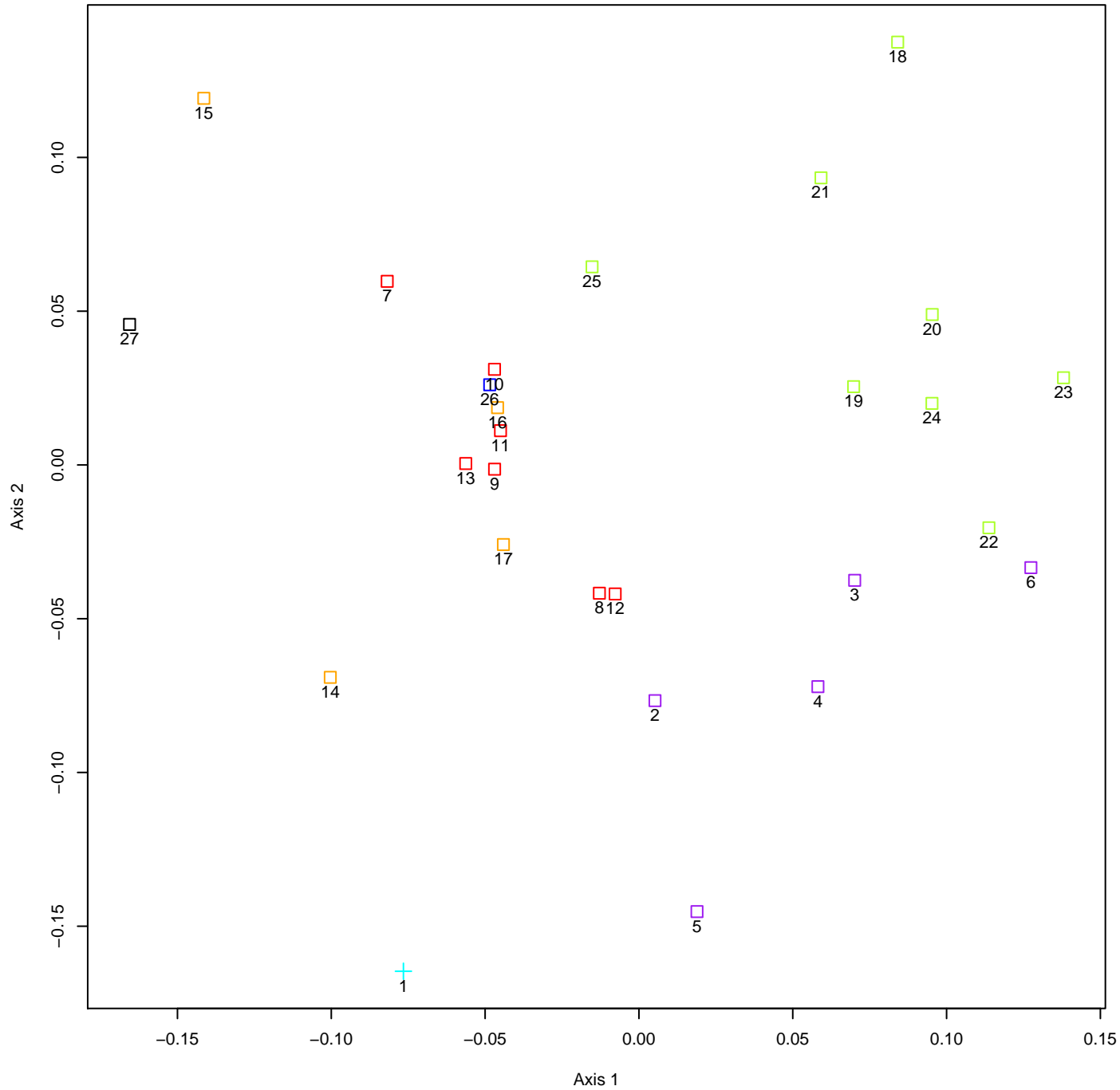
56 Swiss BMD SG [16WS] (N=2113)
57 Swiss BMD SI [16WS] (N=832)
58 Swiss panel4000 [AGP.pPhDSB] (N=120)
59 Bashkirs [16WS.p55] (N=146)
60 Belorussians Brest [16WS.p7] (N=105)
61 Belorussians Gomel [16WS.p5] (N=100)
62 Belorussians Vitebsk [16WS.p6] (N=70)
63 Finns [16WS.p42] (N=150)
64 Finns BMD [16WS.p39] (N=5157)
65 Finns CB [16WS.p38] (N=1005)
66 Kalmyks El Mari [16WS.p8] (N=202)
67 Kalmyks Kalmikia [16WS.p9] (N=136)
68 Nenets [16WS.p11] (N=92)
69 Russians [16WS.p53] (N=206)
70 Russians Arkhangelsk [16WS.p12] (N=81)
71 Russians Kostroma [16WS.p14] (N=126)
72 Russians Smolensk [16WS.p13] (N=156)
73 Russians Vologda [16WS.p15] (N=108)
74 Saami [16WS.p16] (N=107)
75 Tatars [16WS.p17] (N=87)
76 Tatars [16WS.p54] (N=135)
77 Udmurts [16WS.p19] (N=202)
78 Ukrainians Khmelniysky [16WS.p20] (N=137)
79 Ukrainians Lvov [16WS.p21] (N=102)
80 Albanians [15WS.p20] (N=158)
81 Croatians [12WS.p19] (N=104)
82 Croatians [12WS.p21] (N=139)
83 Croatians [16WS.p37] (N=202)
84 Cypriots [16WS.p46] (N=392)
85 Greeks [12WS.p165] (N=192)
86 Greeks [15WS.p12] (N=144)
87 Greeks [16WS.p44] (N=232)
88 Italians [12WS.p45] (N=99)
89 Kosovo Albanians [16WS.p52] (N=120)
90 Macedonians [15WS.p19] (N=566)
91 Northern Italians [16WS.p45] (N=8055)
92 Pomaki [12WS.p164] (N=100)
93 Romanians [12WS.p67] (N=99)
94 Sardinians [12WS.p46] (N=80)
95 Slovenian Donors [16WS.p58] (N=13787)
96 Slovenians [13WS.p36] (N=100)
97 Slovenians [16WS.p57 updated] (N=143)
98 Slovenians CB [16WS.p59] (N=247)
99 Ashkenazi Jews [12WS.p116] (N=40)
100 Hazara [16WS.p22 updated] (N=75)
101 Indians Golla [13WS.p63] (N=109)
102 Iranians [AGP.pmasterSB] (N=111)
103 Iraqi Kurdistan [16WS.p2] (N=404)
104 Libanese [12WS.p145] (N=258)
105 Libyan Jews [12WS.p153] (N=40)
106 Moroccan Jews [12WS.p117] (N=40)
107 Northern Indians [16WS.p43] (N=218)
108 Ouzbeck [16WS.p23 updated] (N=109)
109 Pachtoun [16WS.p24 updated] (N=77)
110 Syrians [16WS.p1] (N=164)

111 Tadjik [16WS.p25 updated] (N=136)
112 Turkmen [16WS.p26 updated] (N=70)
113 Turks [13WS.p65] (N=245)
114 Czech Gypsies [12WS.p23] (N=33)

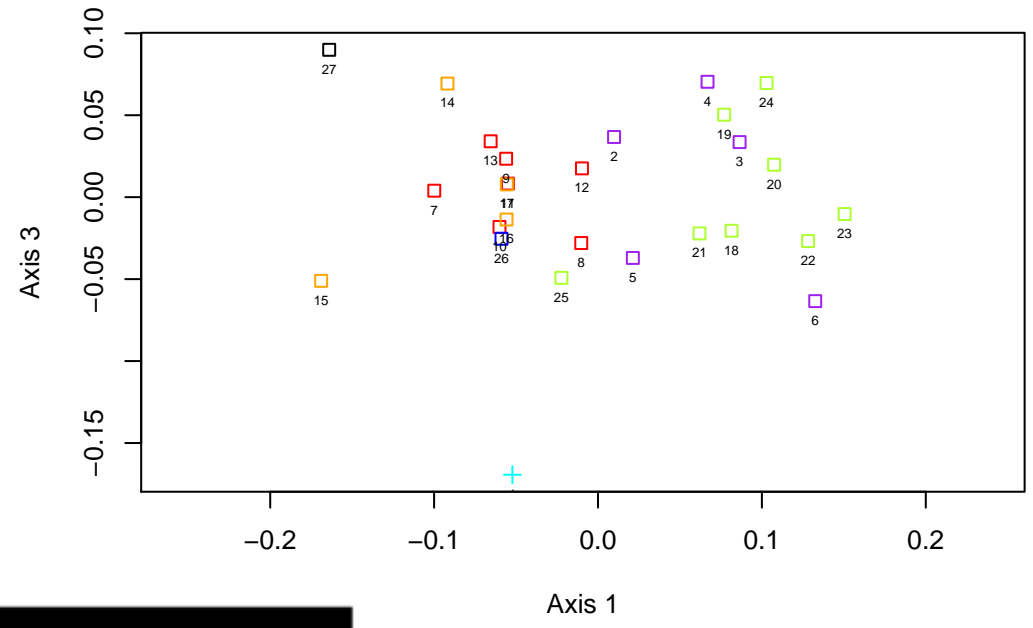
3D stress= 0.1374



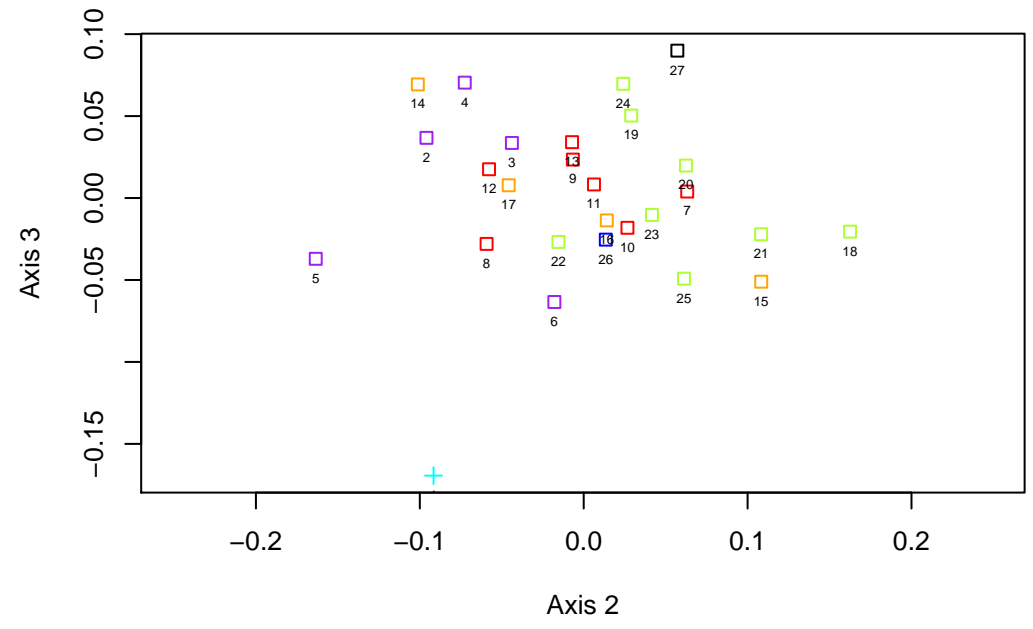
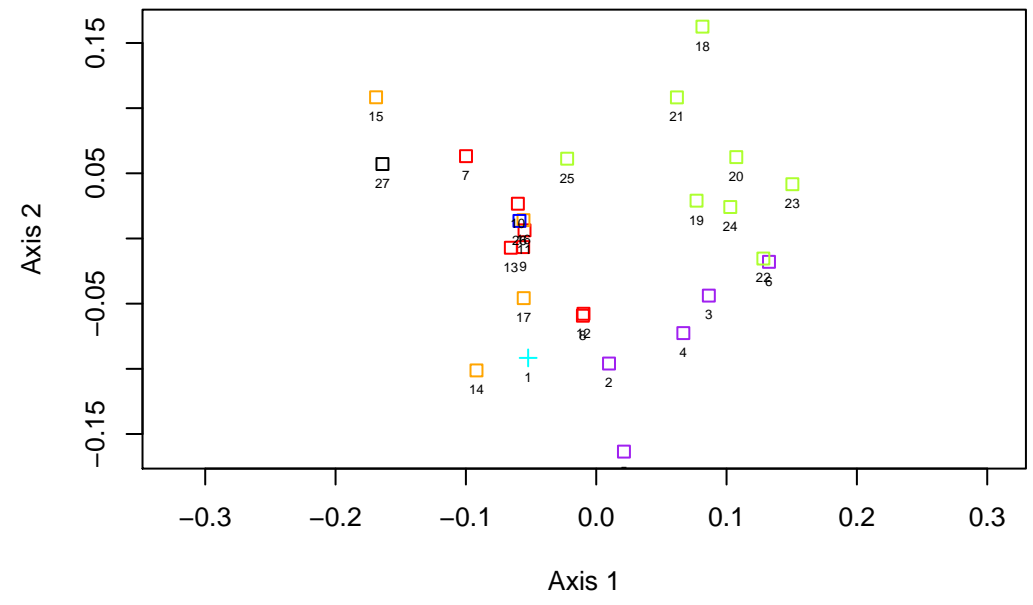
HLA-DQA1 data (stress=0.1188)



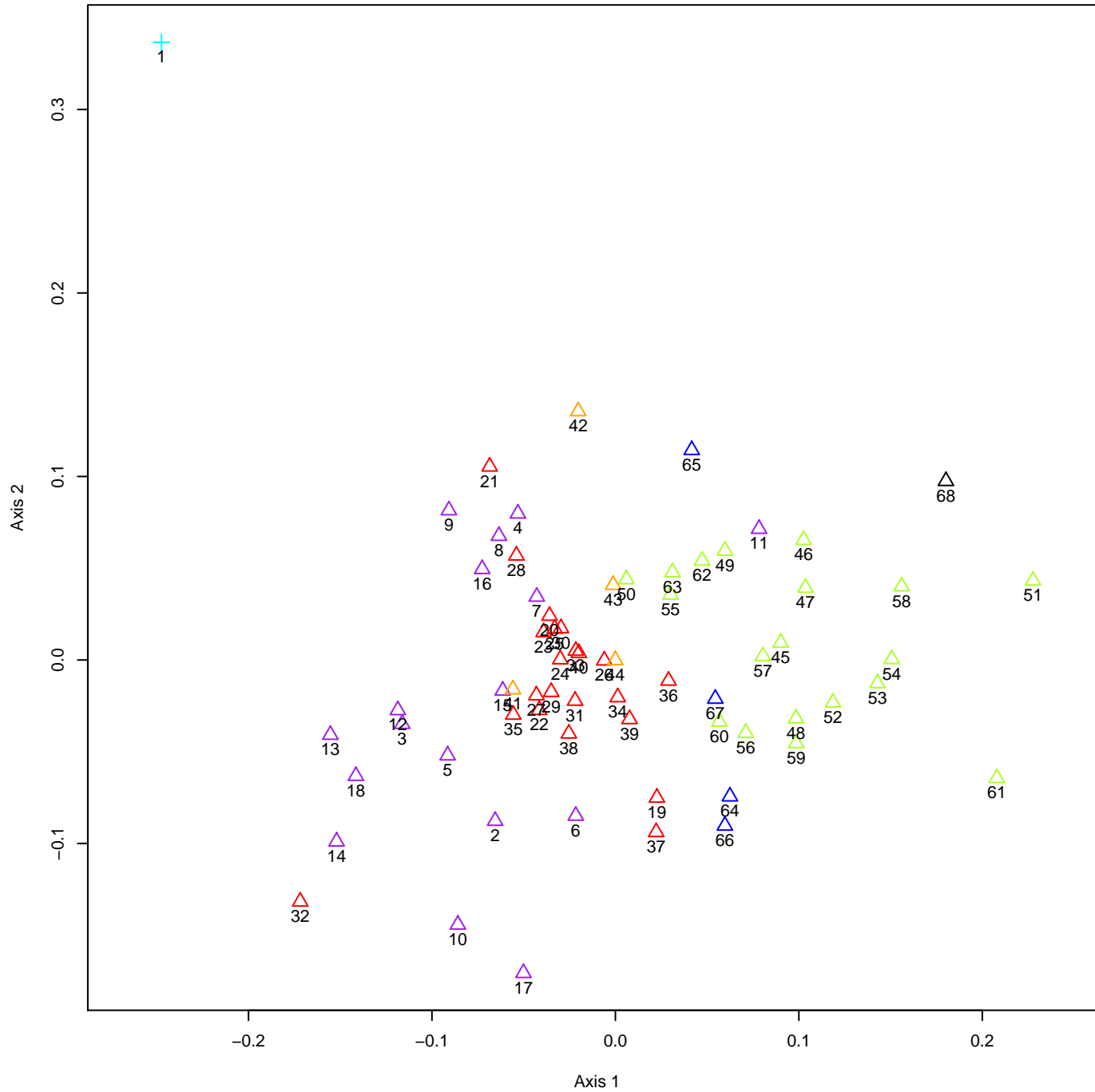
- 1 SouthAfricans [col] (N=253)
- 2 Chaouya [15WS.p2] (N=83)
- 3 Egyptian Copts [Other.psources] (N=40)
- 4 Metalsa [15WS.p13] (N=89)
- 5 Moroccans [13WS.p20] (N=98)
- 6 Tunisians [Other.psources] (N=97)
- 7 Belgians [12WS.p158] (N=40)
- 8 Czechs [13WS.p32] (N=105)
- 9 French [12WS.p229] (N=224)
- 10 Polish [12WS.p156] (N=99)
- 11 Portuguese [12WS.p65] (N=111)
- 12 Spanish [12WS.p104] (N=100)
- 13 Spanish [12WS.p82] (N=125)
- 14 Bashkirs [16WS.p55] (N=146)
- 15 Finns BMD [16WS.p39] (N=672)
- 16 Russians [16WS.p53] (N=207)
- 17 Tatars [16WS.p54] (N=135)
- 18 Croatians [12WS.p19] (N=104)
- 19 Croatians [12WS.p20] (N=106)
- 20 Greeks [12WS.p165] (N=96)
- 21 Italians [12WS.p42] (N=93)
- 22 Italians [12WS.p45] (N=99)
- 23 Pomaki [12WS.p164] (N=100)
- 24 Sardinians [12WS.p46] (N=80)
- 25 Slovenians [13WS.p36] (N=100)
- 26 Punjabi [12WS.p38] (N=51)
- 27 Czech Gypsies [12WS.p23] (N=33)



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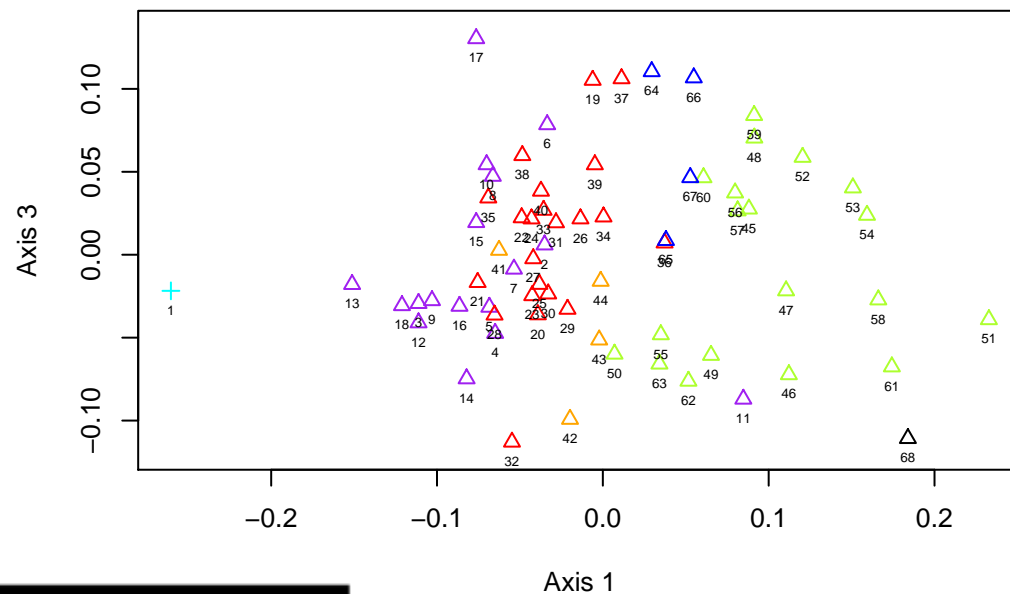
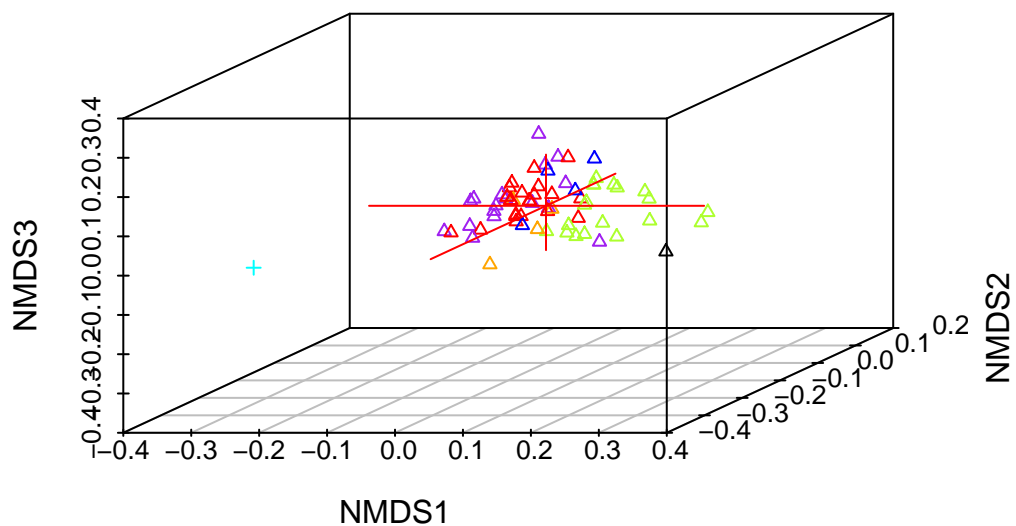
HLA-DQB1 data (stress=0.1357)



1 SouthAfricans [col] (N=12254)
2 Algerians [12WS.p55] (N=100)
3 Algerians [13WS.p17] (N=99)
4 Bedouins [12WS.p171] (N=98)
5 Chaouya [15WS.p2] (N=82)
6 Egyptian Copts [Other.psources] (N=40)
7 Egyptians [16WS.p3] (N=44)
8 Egyptians Delta [Other.psources] (N=101)
9 Egyptians South [Other.psources] (N=94)
10 Gabes [Other.psources] (N=96)
11 Jerba [Other.psources] (N=55)
12 Matmata [Other.psources] (N=81)
13 Metalsa [15WS.p13] (N=96)
14 Moroccans [13WS.p20] (N=98)
15 Mzab [Other.psources] (N=107)
16 Sudanese [16WS.p35] (N=230)
17 Tunisians Sened [15WS.p3] (N=52)
18 Tunisians Tataouine [15WS.p4] (N=52)
19 Austrians Oetztal [15WS.p6] (N=57)
20 Austrians Vienna [15WS.p5] (N=200)
21 Belgians [12WS.p158] (N=40)
22 British Wales [16WS.p27] (N=1000)
23 Czechs [12WS.p22] (N=35)
24 Czechs [13WS.p32] (N=106)
25 French [12WS.p229] (N=224)
26 French [12WS.p61] (N=234)
27 French Montpellier [16WS.p36] (N=1431)
28 Polish [12WS.p156] (N=99)
29 Portuguese [12WS.p195] (N=220)
30 Portuguese [12WS.p65] (N=111)
31 Spanish [12WS.p104] (N=100)
32 Spanish Basques [12WS.p120] (N=158)
33 Swiss BMD BE [16WS] (N=661)
34 Swiss BMD GE [16WS] (N=97)
35 Swiss BMD GR [16WS] (N=40)
36 Swiss BMD LG [16WS] (N=99)
37 Swiss BMD LS [16WS] (N=74)
38 Swiss BMD LU [16WS] (N=92)
39 Swiss BMD SG [16WS] (N=135)
40 Swiss BMD SI [16WS] (N=62)
41 Bashkirs [16WS.p55] (N=146)
42 Finns BMD [16WS.p39] (N=1528)
43 Russians [16WS.p53] (N=207)
44 Tatars [16WS.p54] (N=135)
45 Albanians [15WS.p20] (N=152)
46 Bulgarians [12WS.p119] (N=120)
47 Croatians [12WS.p19] (N=102)
48 Croatians [12WS.p20] (N=104)
49 Croatians [12WS.p21] (N=139)
50 Croatians [16WS.p37] (N=202)
51 Cypriots [16WS.p46] (N=350)
52 Greeks [12WS.p165] (N=96)
53 Greeks [15WS.p12] (N=144)
54 Greeks [16WS.p44] (N=232)
55 Italians [12WS.p42] (N=93)

56 Italians [12WS.p45] (N=98)
57 Kosovo Albanians [16WS.p52] (N=120)
58 Macedonians [15WS.p19] (N=218)
59 Northern Italians [16WS.p45] (N=419)
60 Pomaki [12WS.p164] (N=100)
61 Sardinians [12WS.p46] (N=80)
62 Slovenians [13WS.p36] (N=100)
63 Slovenians [16WS.p57 updated] (N=142)
64 Iraqi Kurdistan [16WS.p2] (N=98)
65 Punjabi [12WS.p38] (N=42)
66 Syrians [16WS.p1] (N=164)
67 Turks [13WS.p65] (N=245)
68 Czech Gypsies [12WS.p23] (N=33)

3D stress= 0.05856



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Nunes et al. (2014)
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