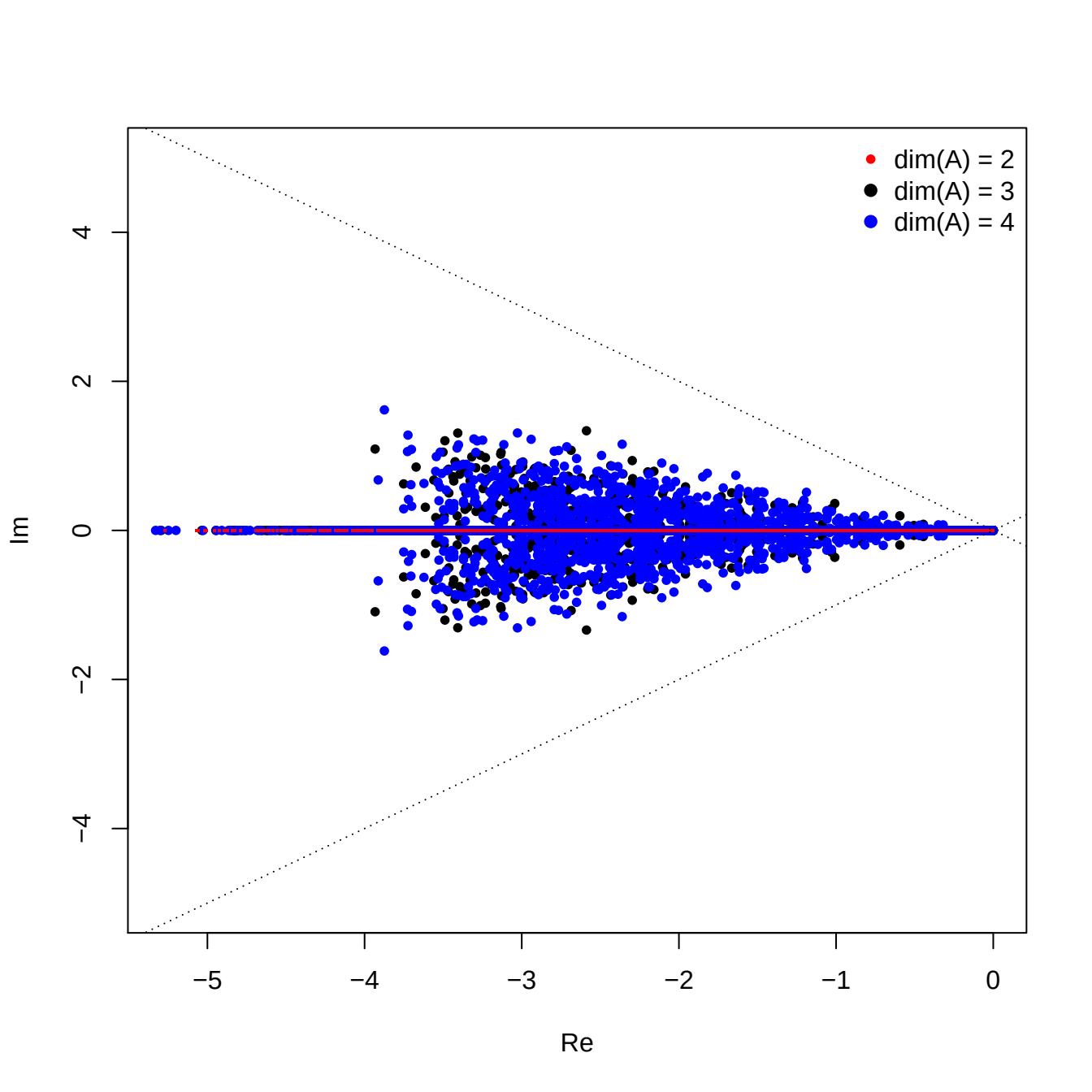
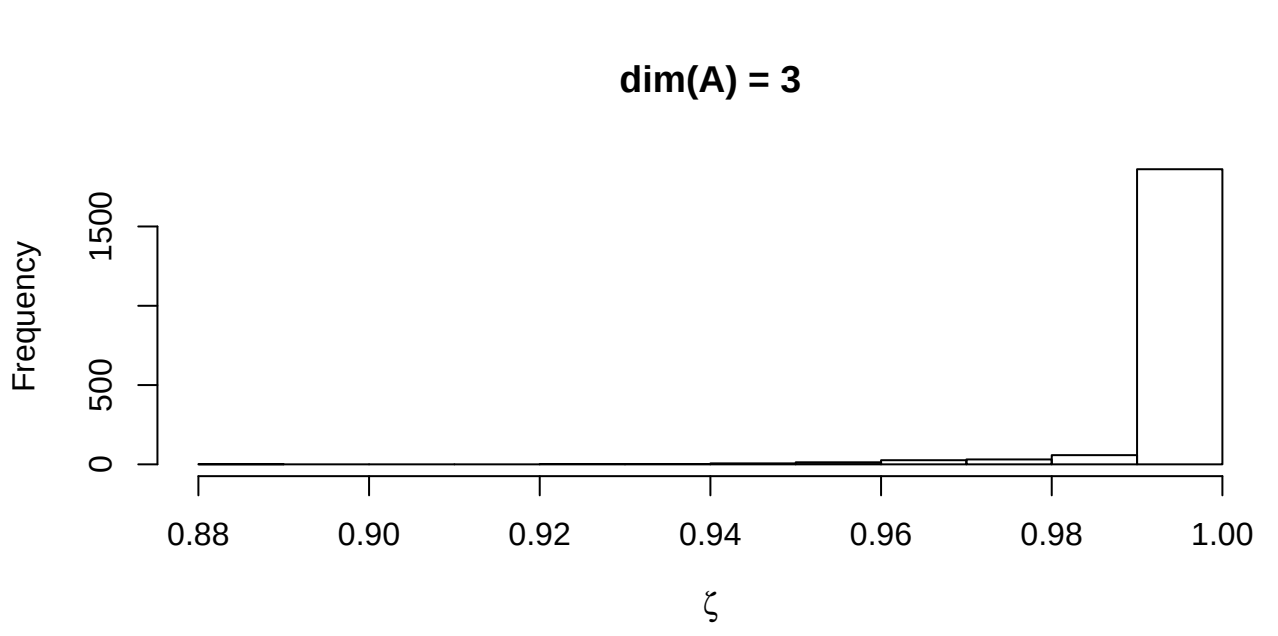
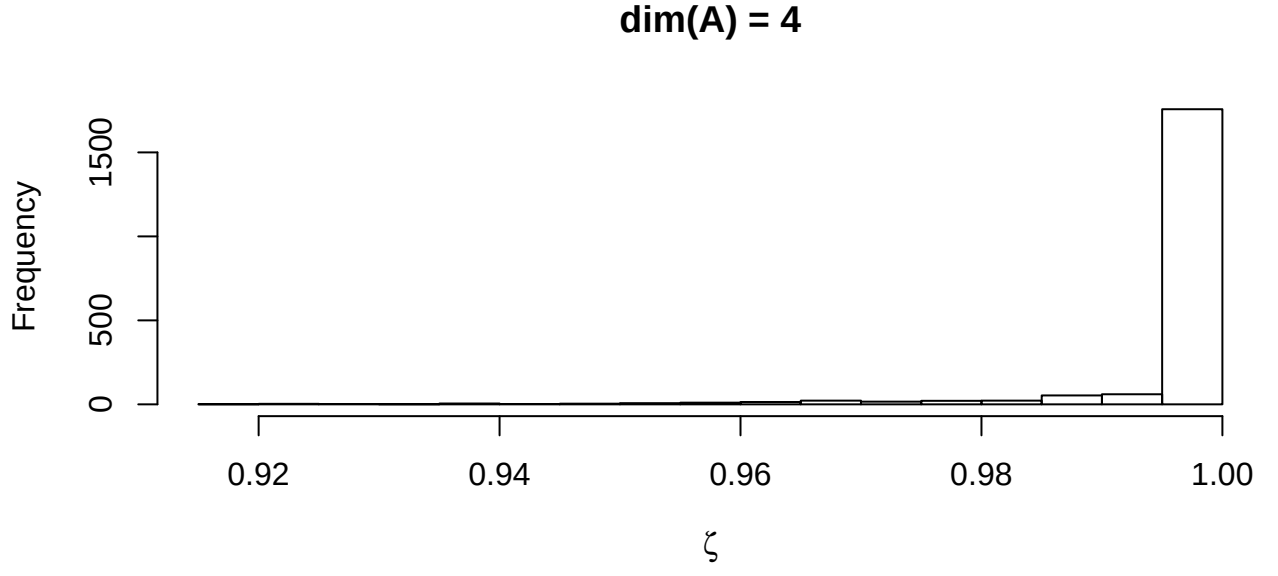
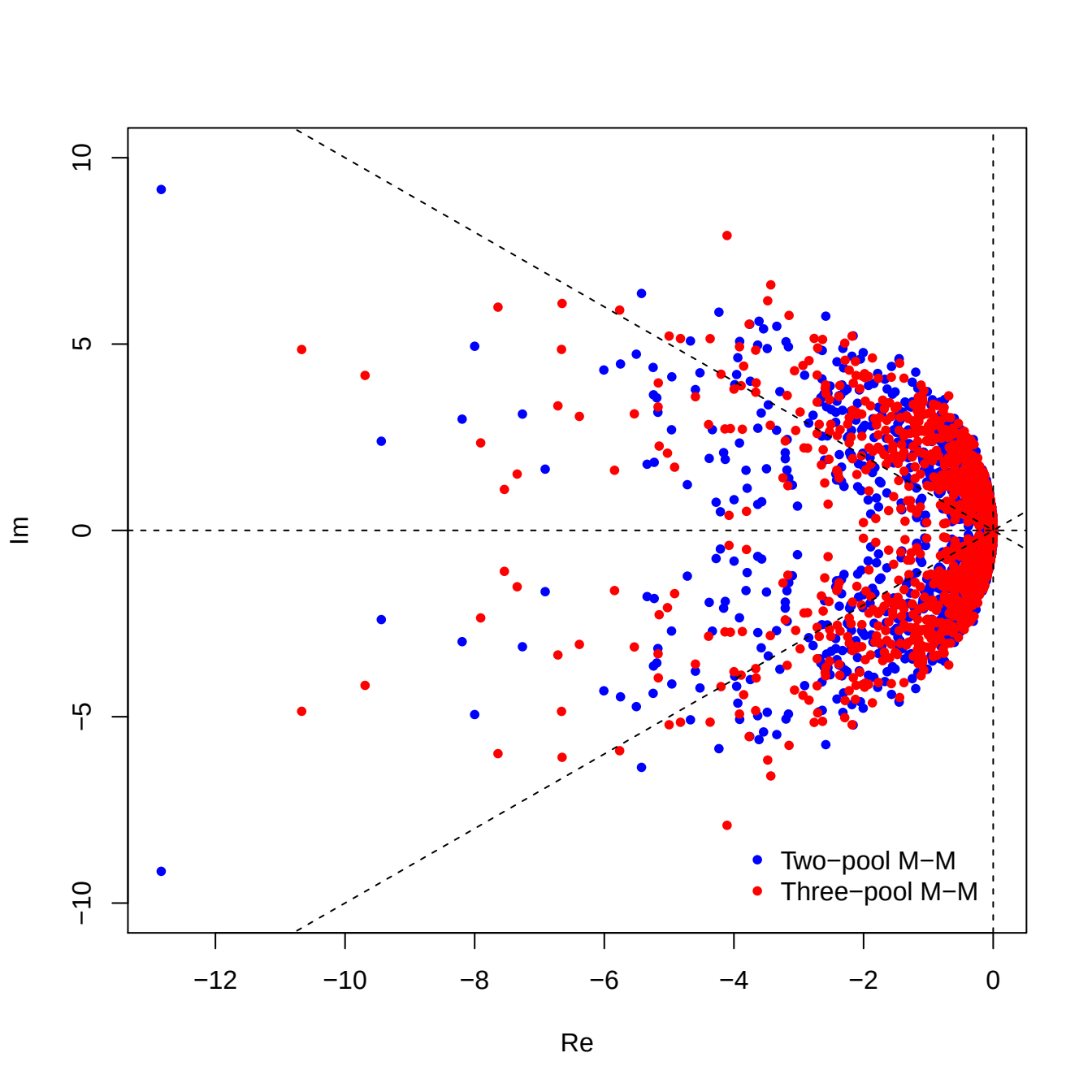
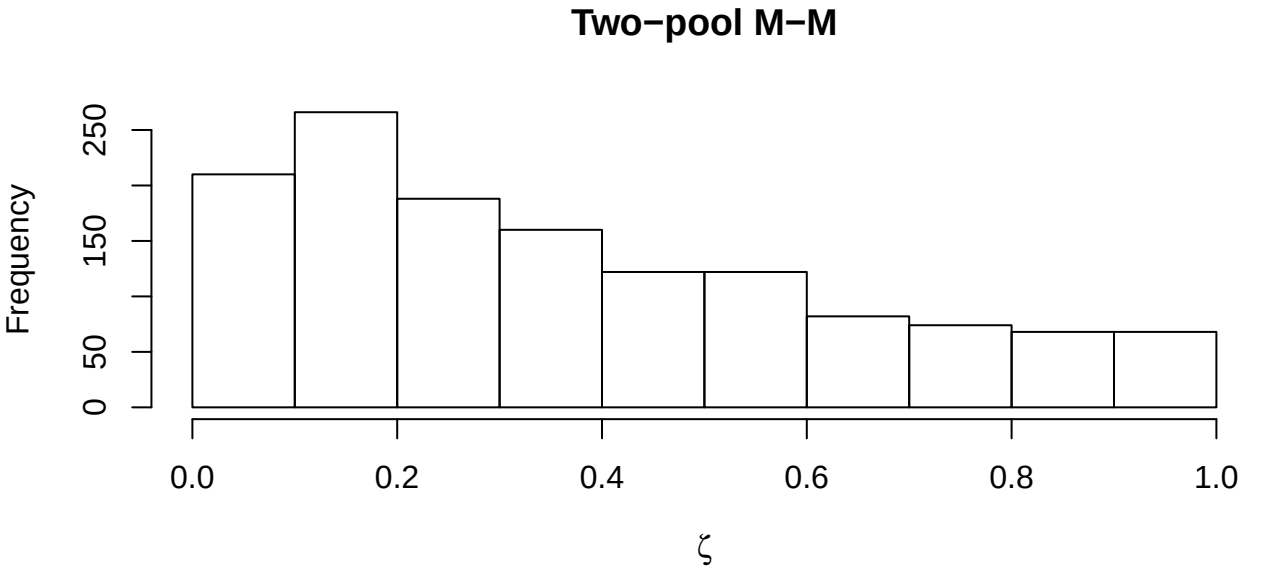
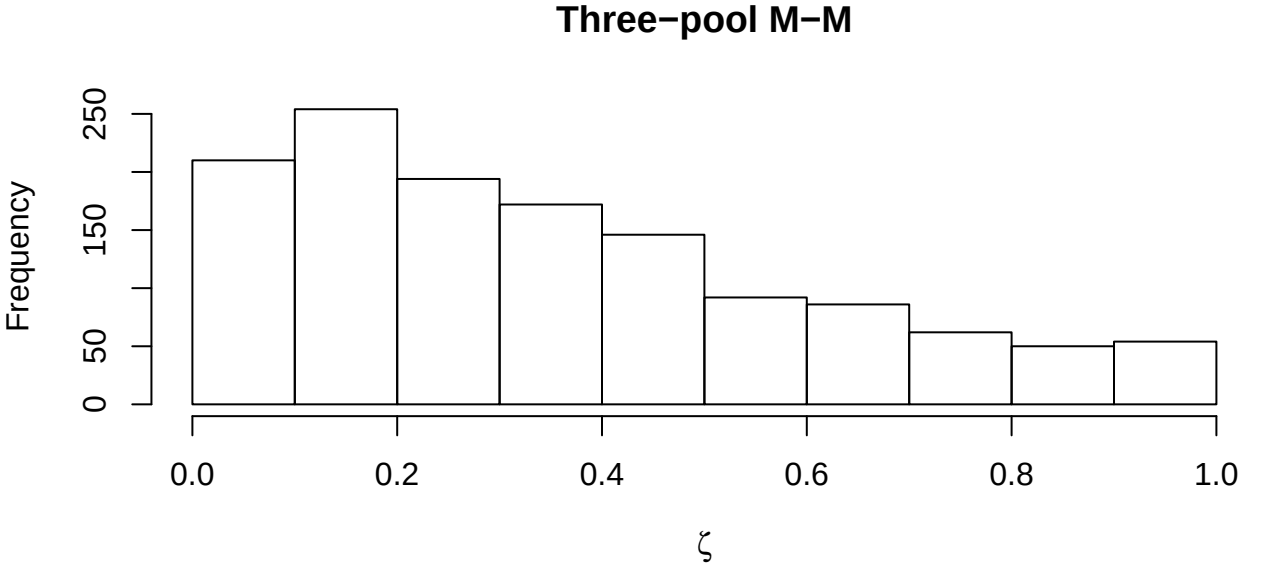

dim(A) = 2
dim(A) = 3
dim(A) = 4
Im
Re
4
2
0
−2
−4
−5
−4
−3
−2
−1
0

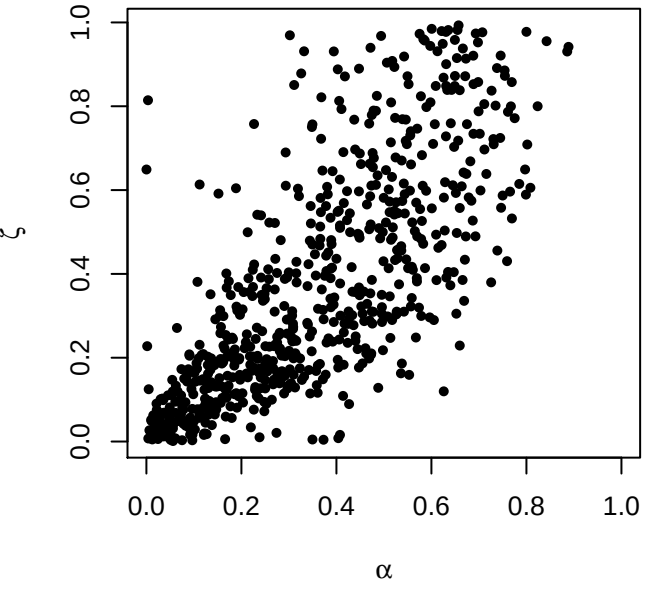

dim(A) = 3
Frequency
0
500
1500
0.88
0.90
0.92
0.94
0.96
0.98
1.00
ζ

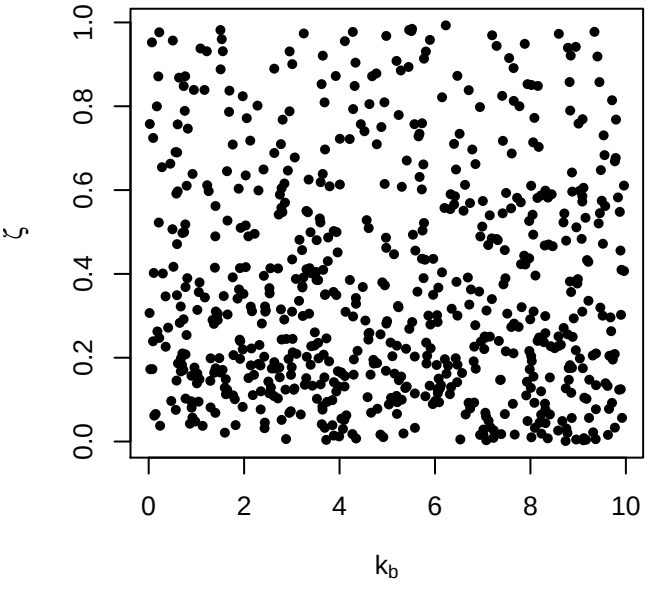

dim(A) = 4
Frequency
0
500
1500
0.92
0.94
0.96
0.98
1.00
ζ

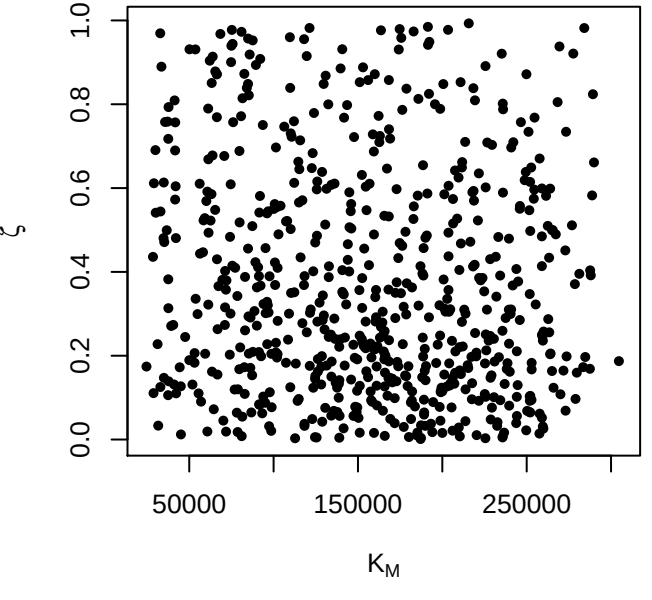

10
5
0
−5
−10
Im
−12
−10
−8
−6
−4
−2
0
Re
Two−pool M−M
Three−pool M−M

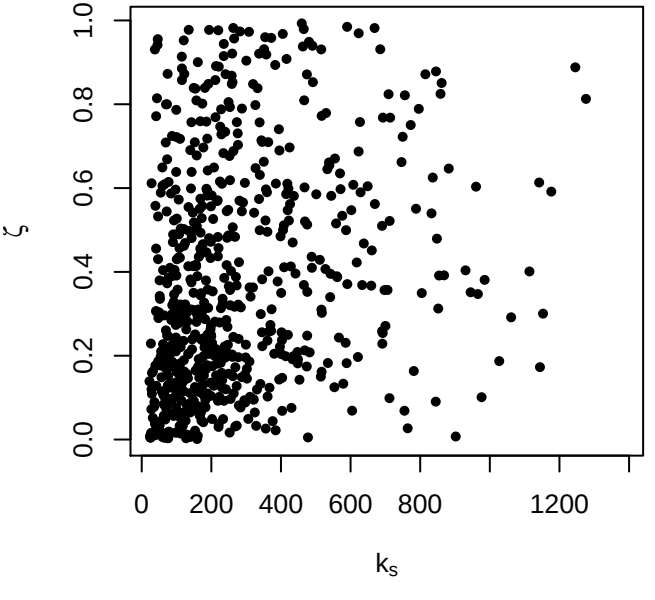

Two−pool M−M
Frequency
0
50
150
250
0.0
0.2
0.4
0.6
0.8
1.0
ζ

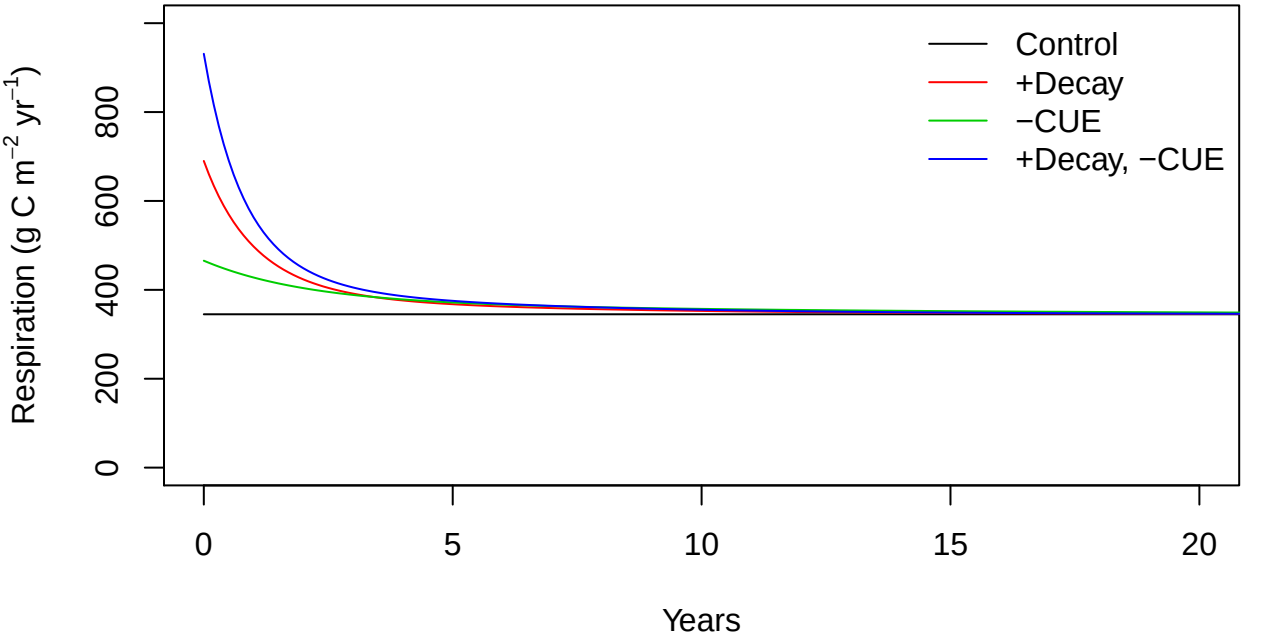

Three−pool M−M
Frequency
0
50
150
250
0.0
0.2
0.4
0.6
0.8
1.0
ζ

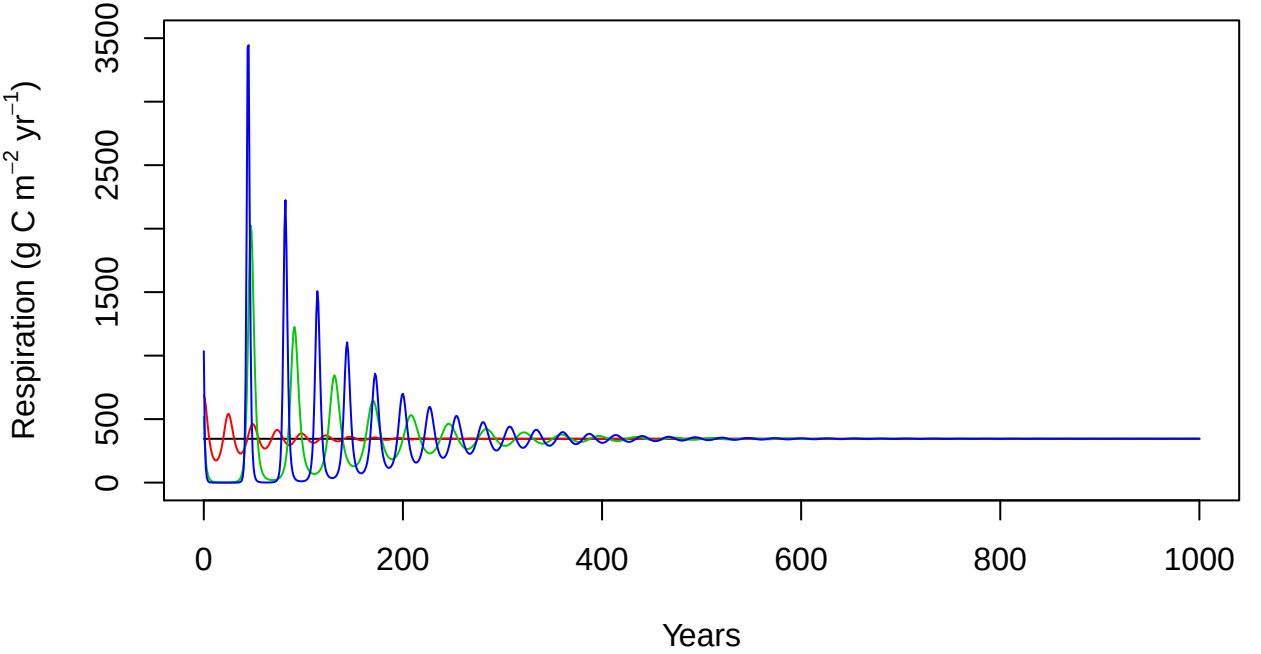

ζ
0.0
0.2
0.4
0.6
0.8
1.0
α

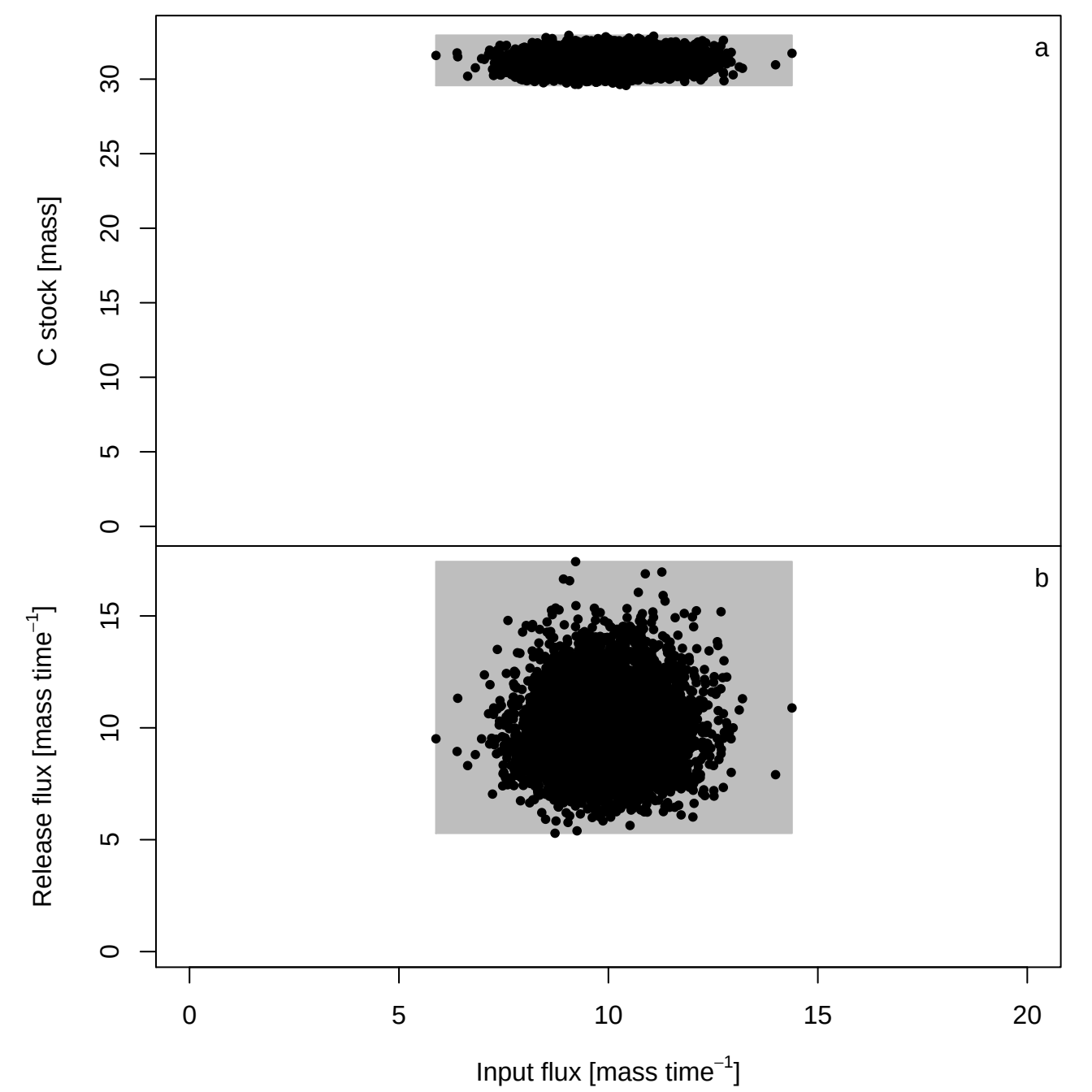

ζ
0.0
0.2
0.4
0.6
0.8
1.0
0
2
4
6
8
10
k_b

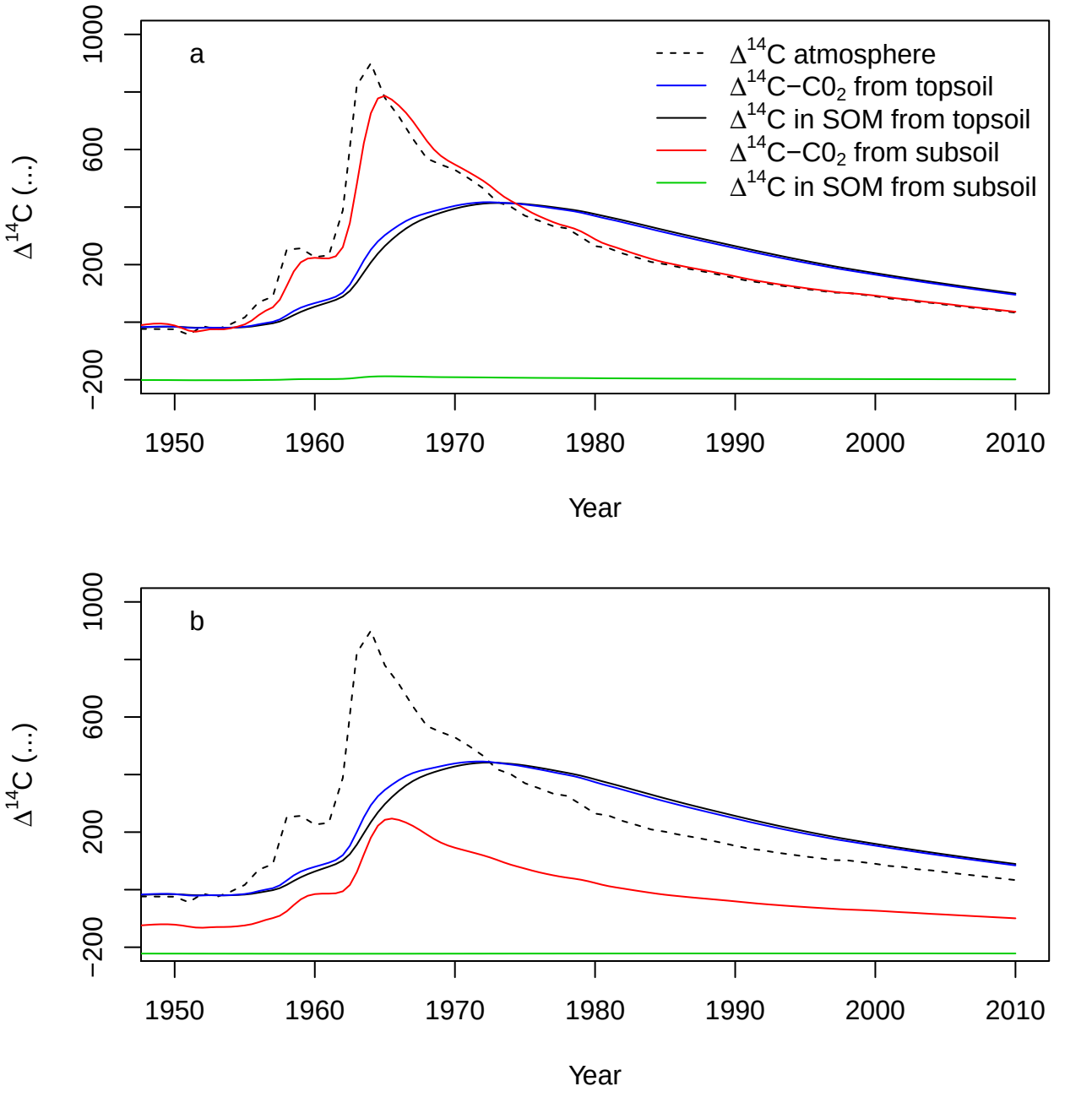

ζ
0.0
0.2
0.4
0.6
0.8
1.0
50000
150000
250000
K_M

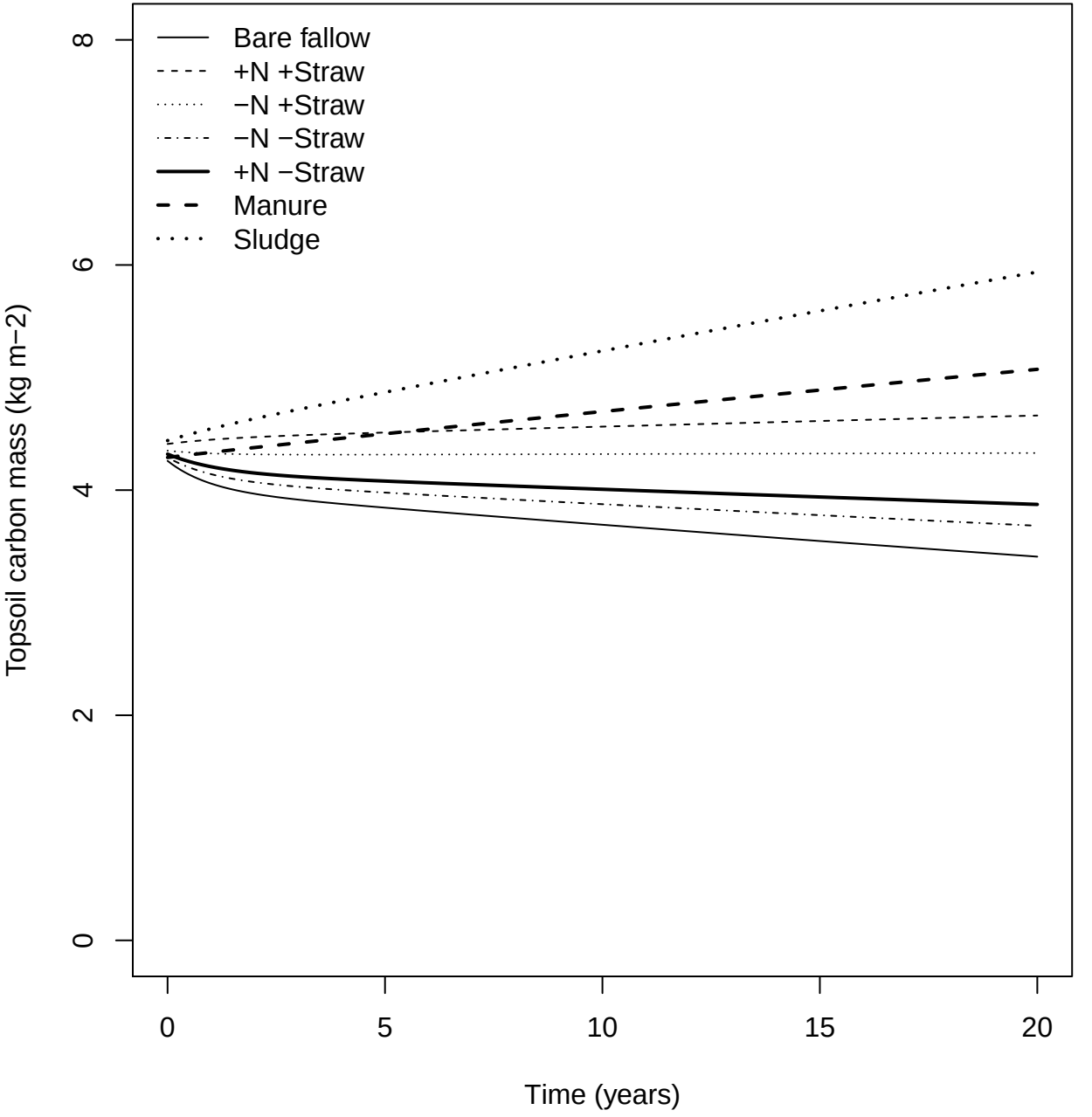

ζ
0.0
0.2
0.4
0.6
0.8
1.0
0
200
400
600
800
1200
k_s

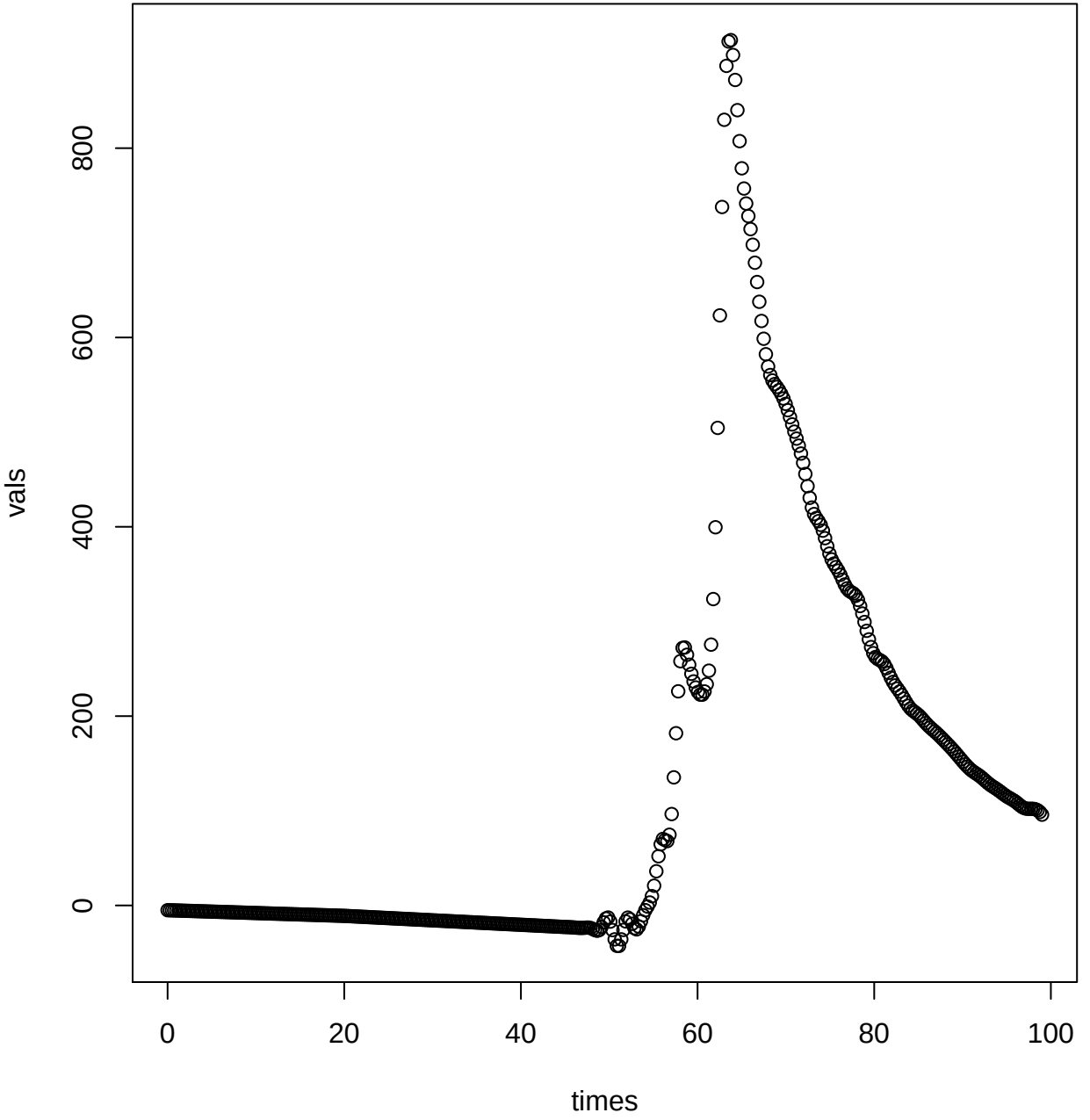

Control
+Decay
−CUE
+Decay, −CUE
Respiration (g C m^{-2} yr^{-1})
0
200
400
600
800
0
5
10
15
20
Years


Respiration (g C m^{-2} yr^{-1})
0
500
1500
2500
3500
0
200
400
600
800
1000
Years


a
b
C stock [mass]
Release flux [mass time^{-1}]
Input flux [mass time^{-1}]
0
5
10
15
20
25
30


a
b
Δ^{14}C atmosphere
Δ^{14}C−C0$_2$ from topsoil
Δ^{14}C in SOM from topsoil
Δ^{14}C−C0$_2$ from subsoil
Δ^{14}C in SOM from subsoil
Δ^{14}C (...)
1000
600
200
−200
1950
1960
1970
1980
1990
2000
2010
Year


Bare fallow
+N +Straw
−N +Straw
−N −Straw
+N −Straw
Manure
Sludge
Topsoil carbon mass (kg m−2)
0
2
4
6
8
0
5
10
15
20
Time (years)


vals
0
200
400
600
800
0
20
40
60
80
100
times