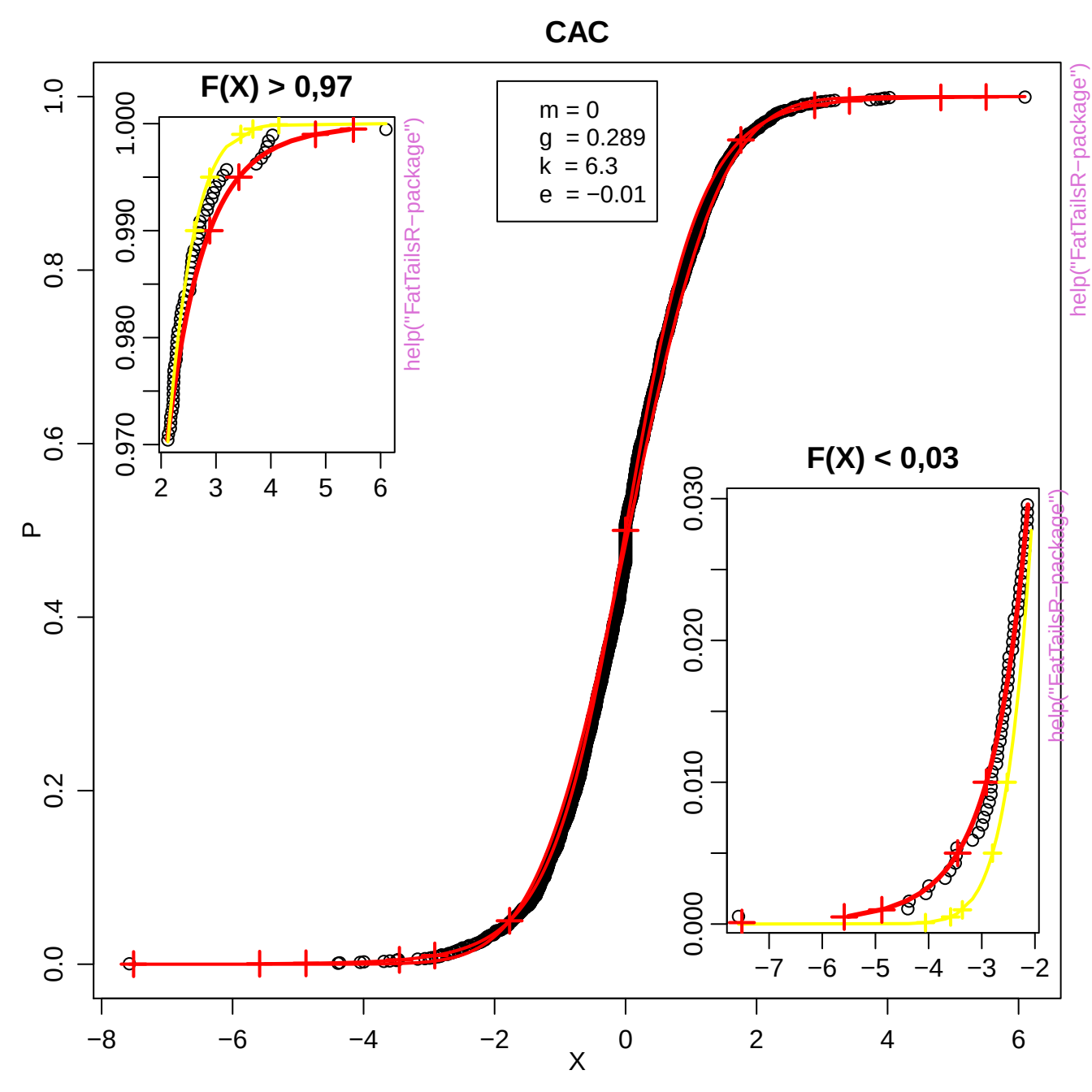
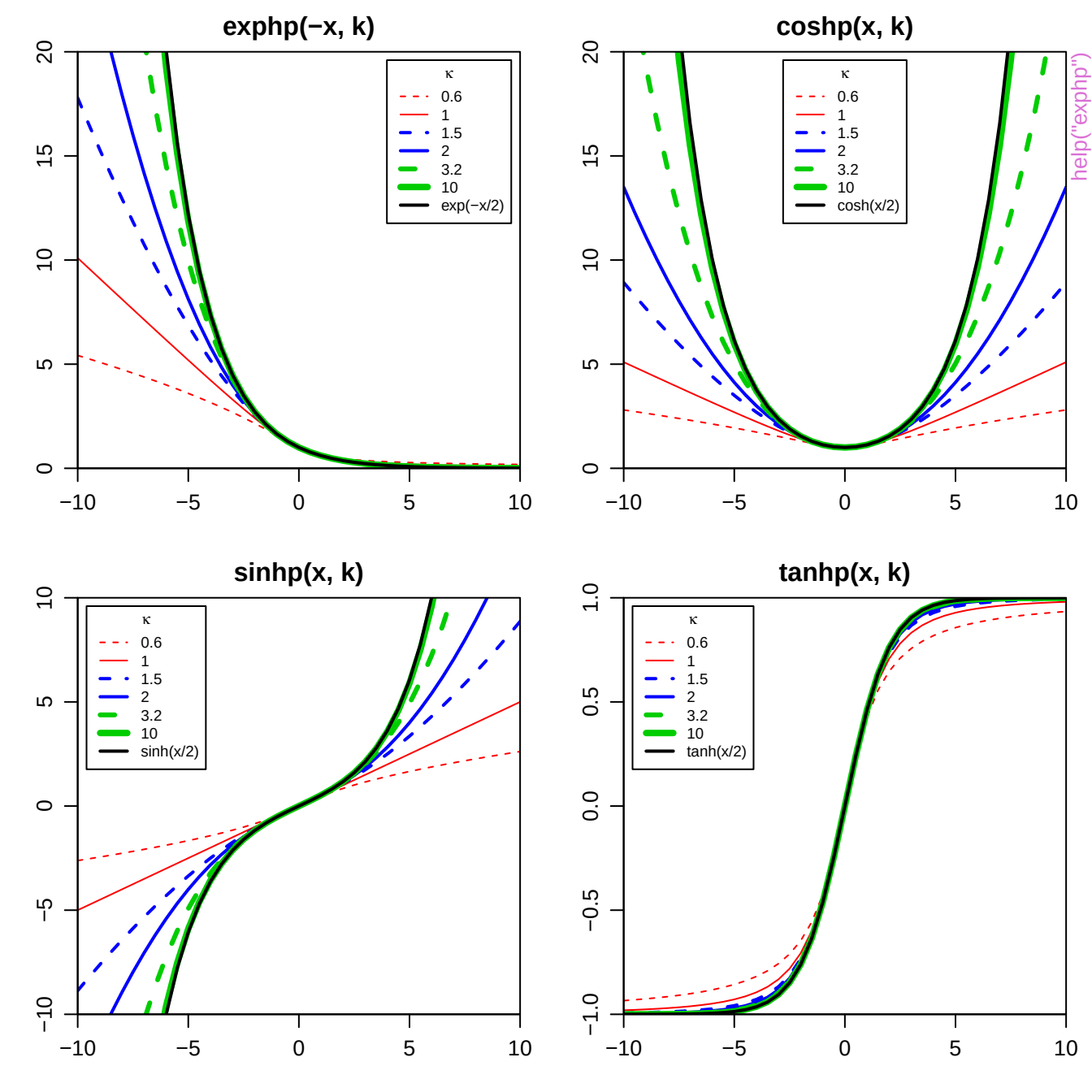
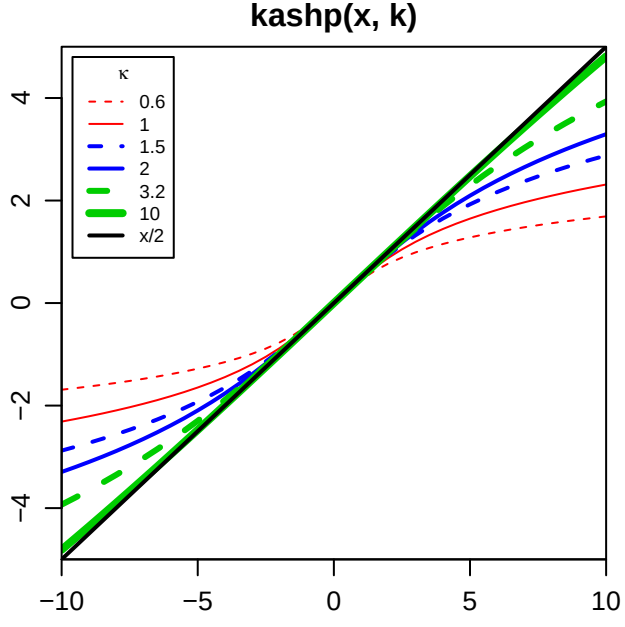
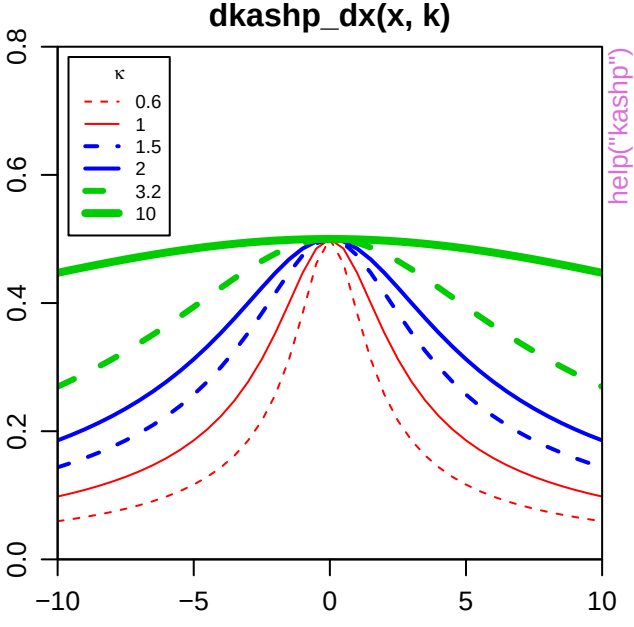
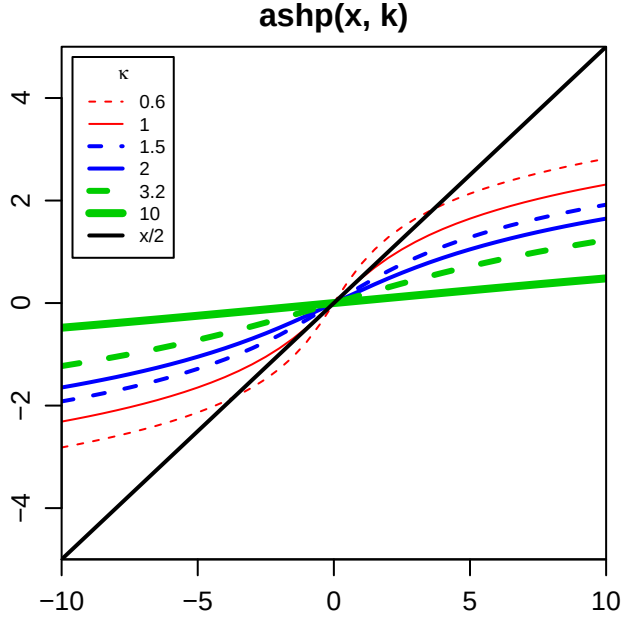
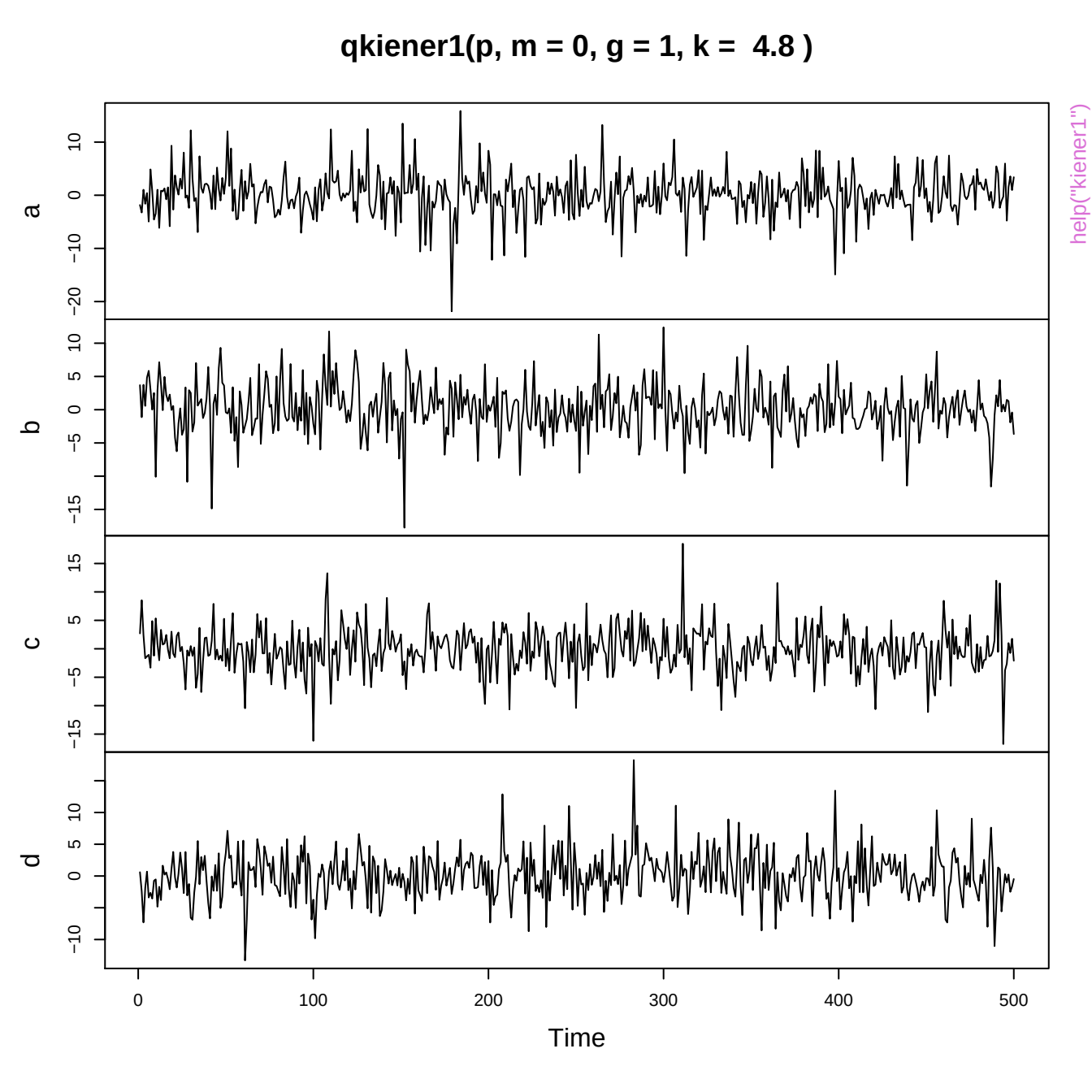

CAC
F(X) > 0,97
F(X) < 0,03
m = 0
g = 0.289
k = 6.3
e = −0.01
P
X
help("FatTailsR−package")

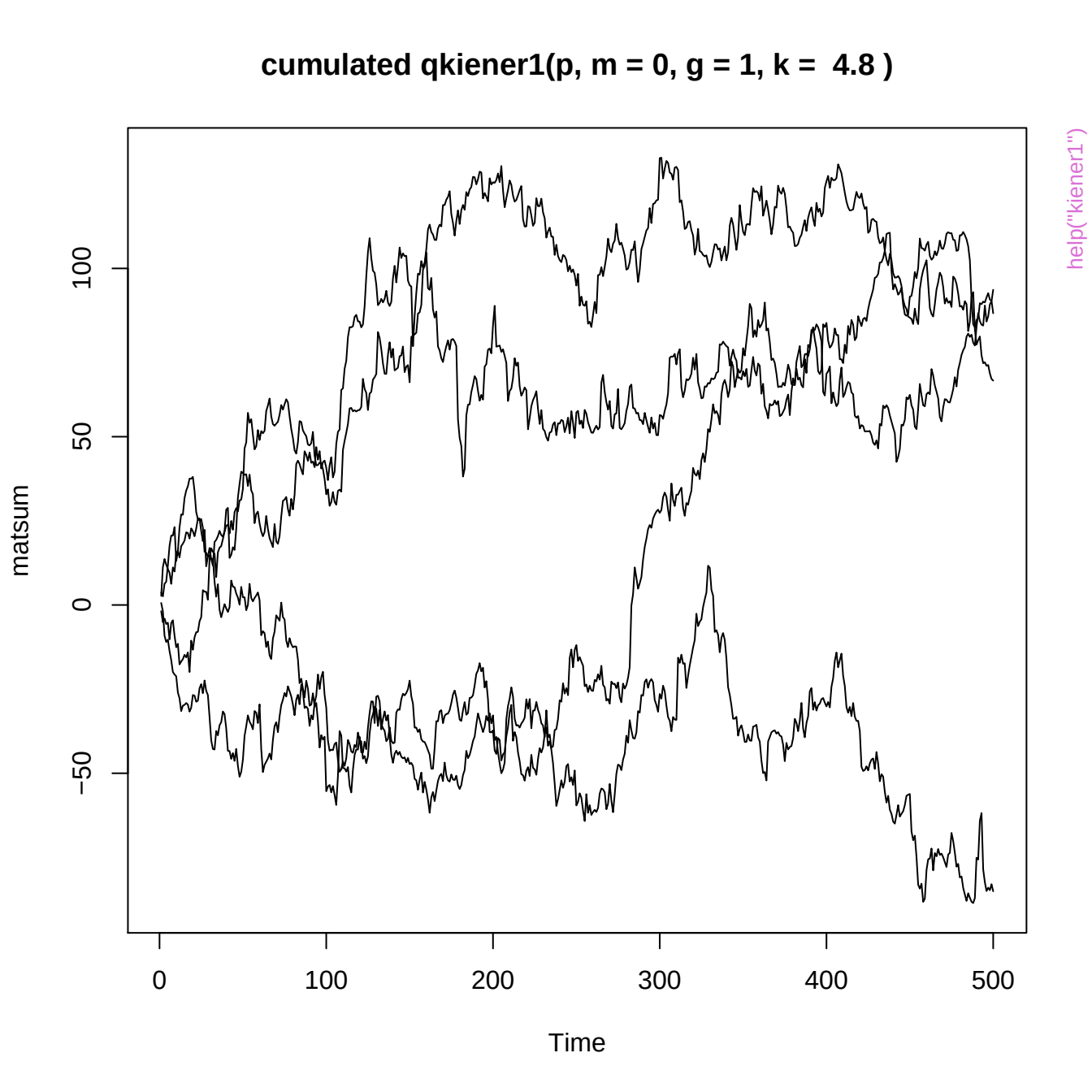

exphp(−x, k)
coshp(x, k)
sinhp(x, k)
tanhp(x, k)
κ
0.6
1
1.5
2
3.2
10
exp(−x/2)
cosh(x/2)
sinh(x/2)
tanh(x/2)
help("exphp")

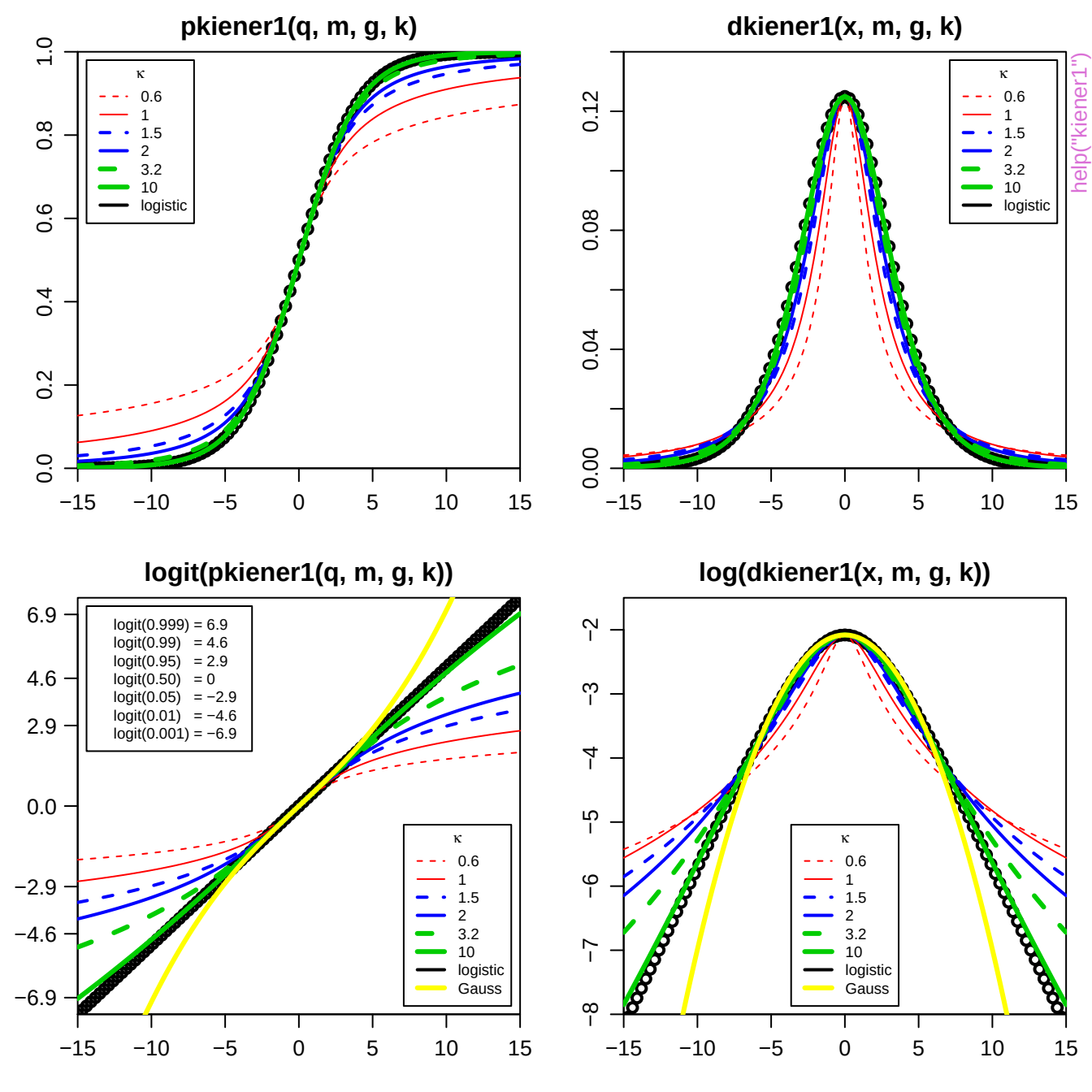

kashp(x, k)
κ
0.6
1
1.5
2
3.2
10
x/2
4
2
0
−2
−4
−10
−5
0
5
10

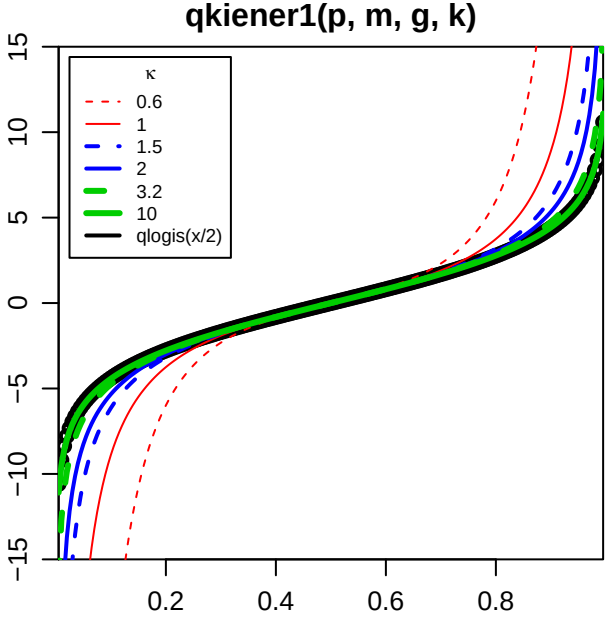

dkashp_dx(x, k)
κ
0.6
1
1.5
2
3.2
10
0.8
0.6
0.4
0.2
0.0
−10
−5
0
5
10
help("kashp")

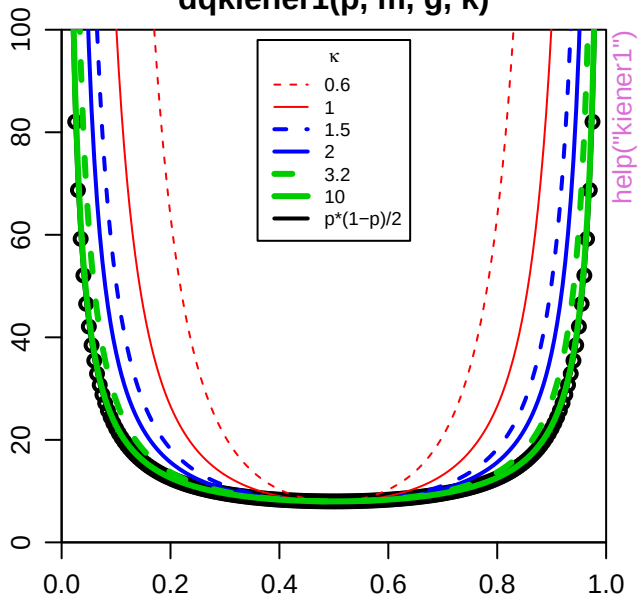

ashp(x, k)
κ
0.6
1
1.5
2
3.2
10
x/2
4
2
0
−2
−4
−10
−5
0
5
10

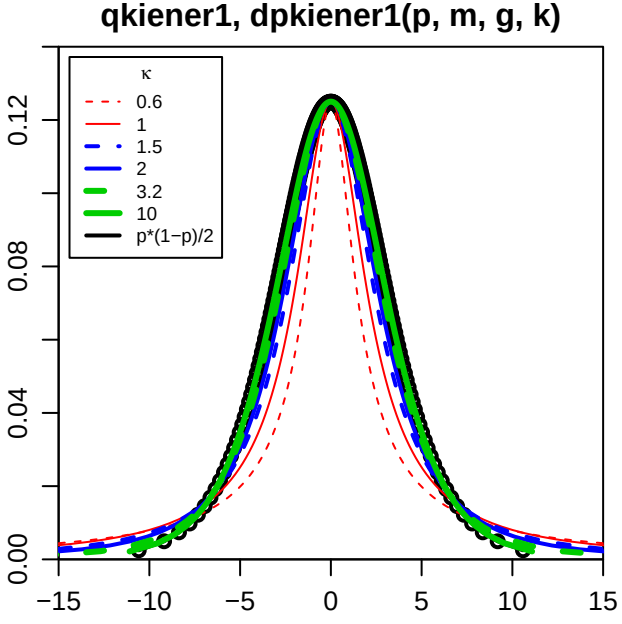

qkiener1(p, m = 0, g = 1, k = 4.8)
a
b
c
d
Time
help("kiener1")

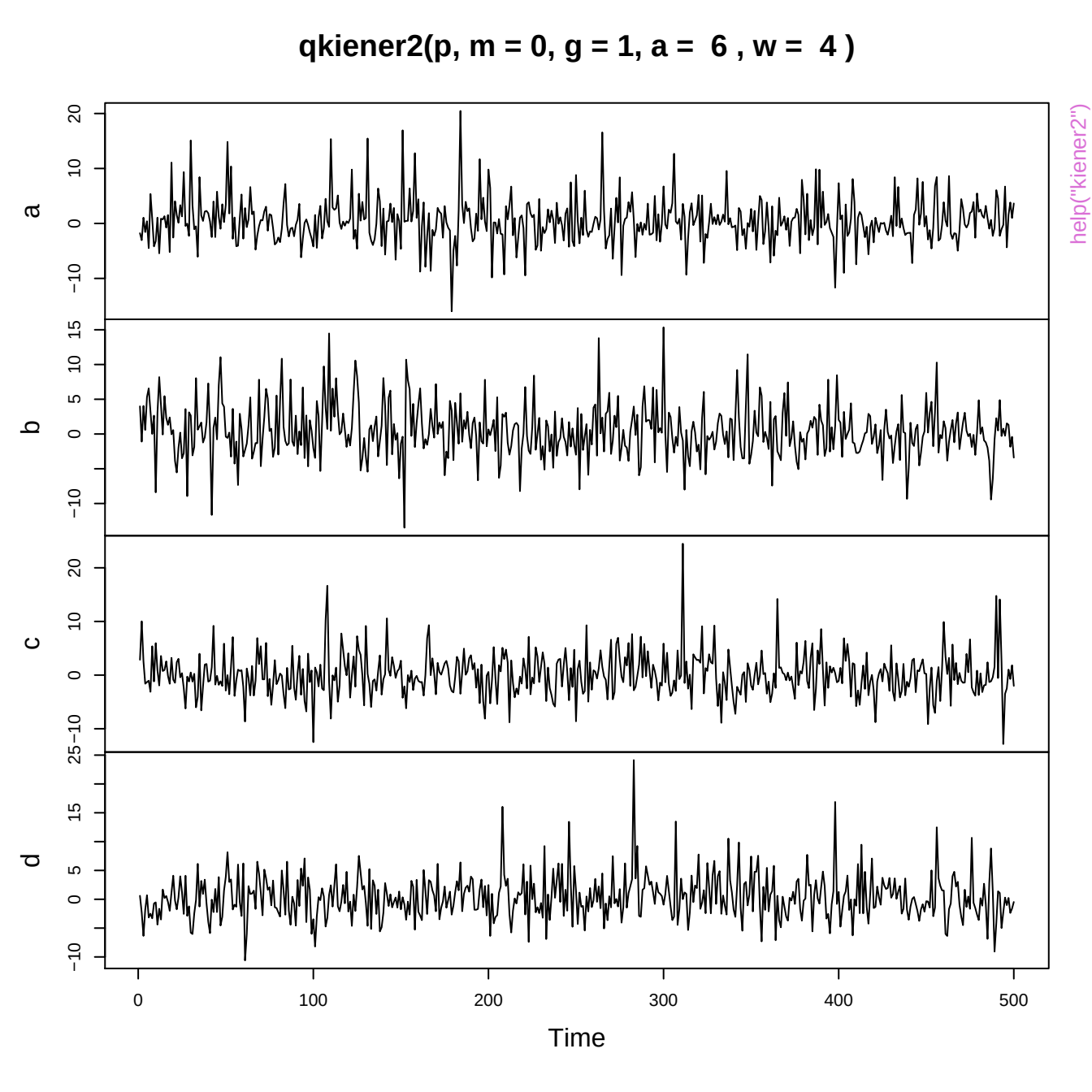

cumulated qkiener1(p, m = 0, g = 1, k = 4.8)
matsum
100
50
0
−50
0
100
200
300
400
500
Time
help("kiener1")

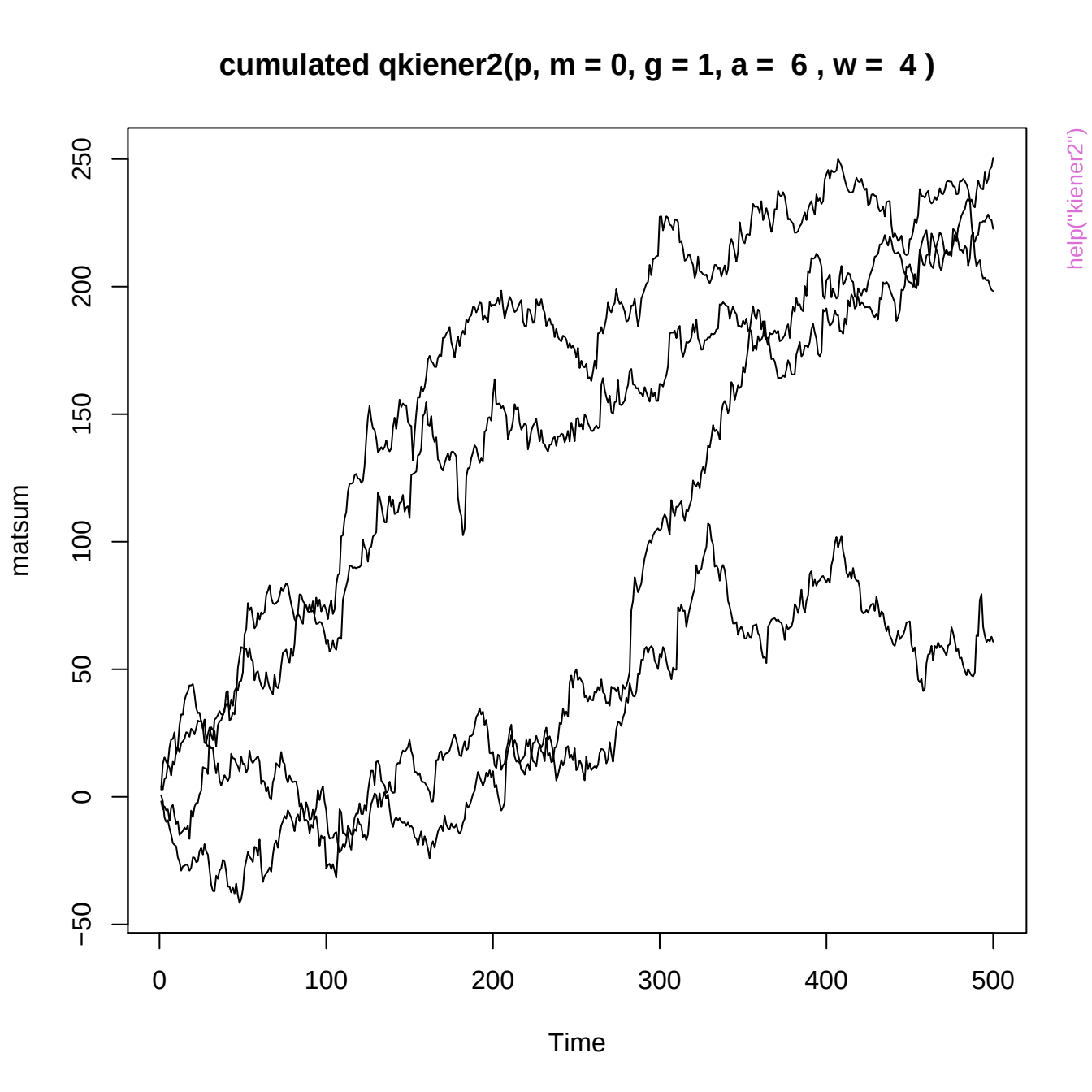

pkiener1(q, m, g, k)
dkiener1(x, m, g, k)
logit(pkiener1(q, m, g, k))
log(dkiener1(x, m, g, k))
κ
0.6
1
1.5
2
3.2
10
logistic
Gauss
logit(0.999) = 6.9
logit(0.99) = 4.6
logit(0.95) = 2.9
logit(0.50) = 0
logit(0.05) = −2.9
logit(0.01) = −4.6
logit(0.001) = −6.9
help("kiener1")

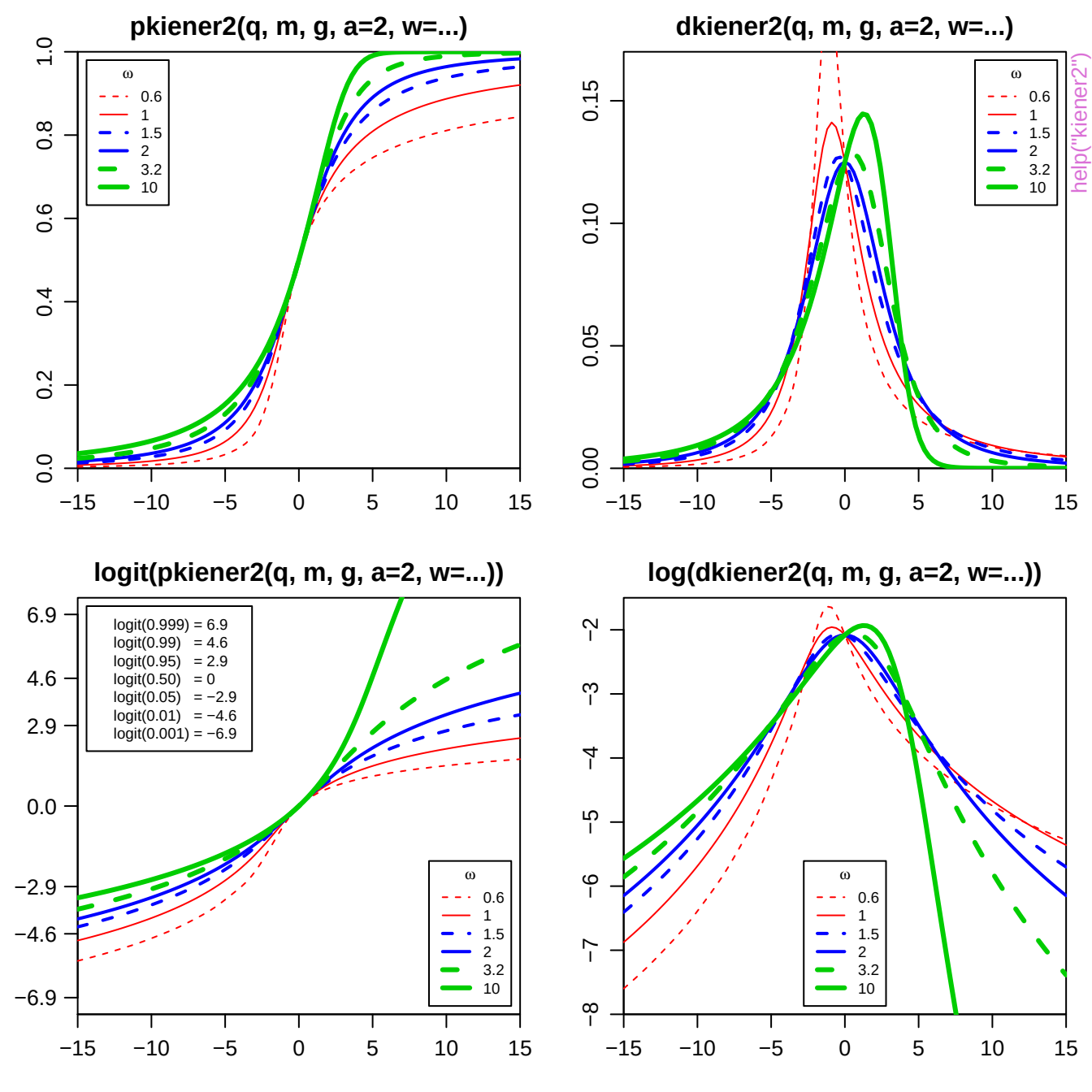

qkiener1(p, m, g, k)
κ
0.6
1
1.5
2
3.2
10
qlogis(x/2)
15
10
5
0
−5
−10
−15
0.2
0.4
0.6
0.8

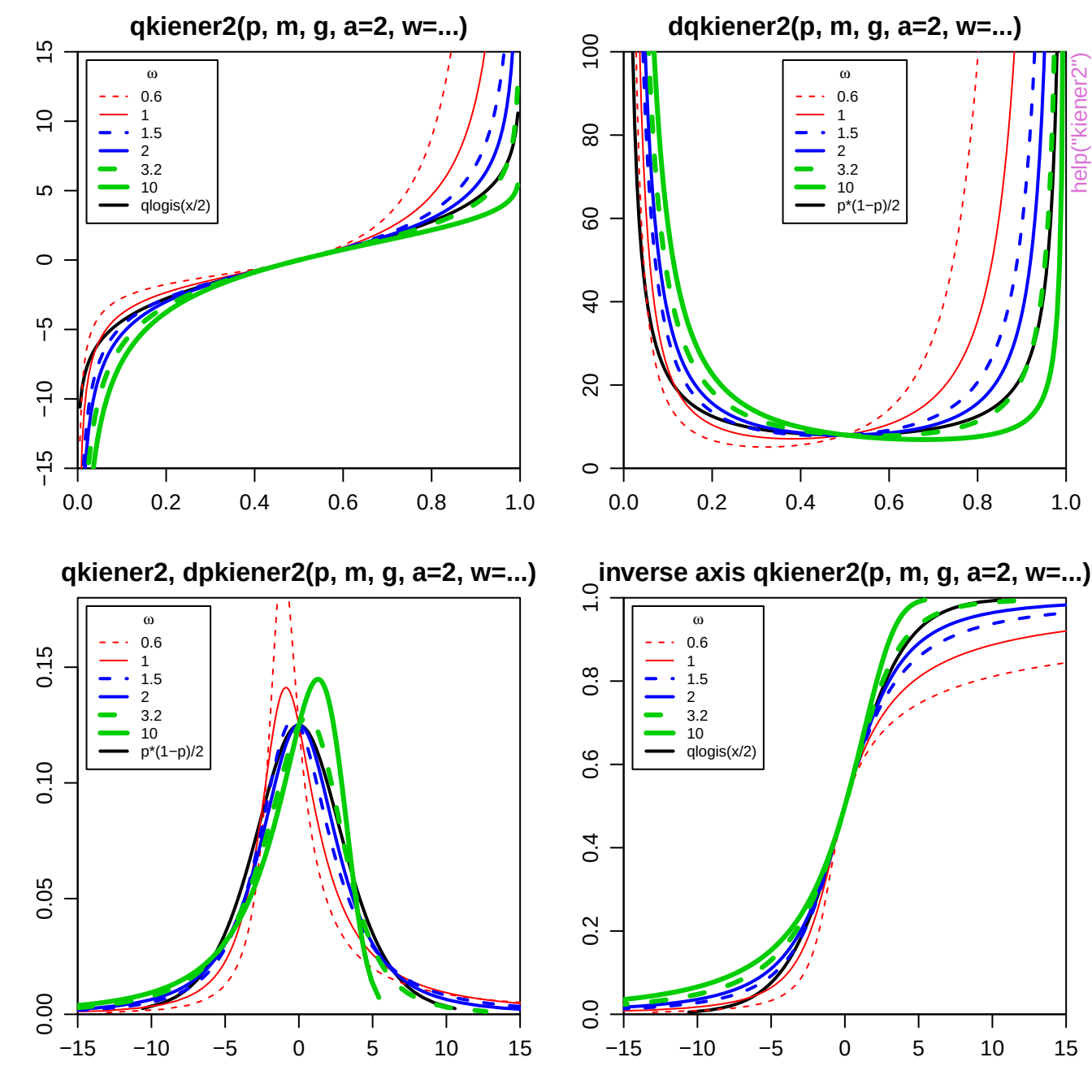

dqkiener1(p, m, g, k)
κ
0.6
1
1.5
2
3.2
10
p*(1−p)/2
100
80
60
40
20
0
0.0
0.2
0.4
0.6
0.8
1.0
help("kiener1")

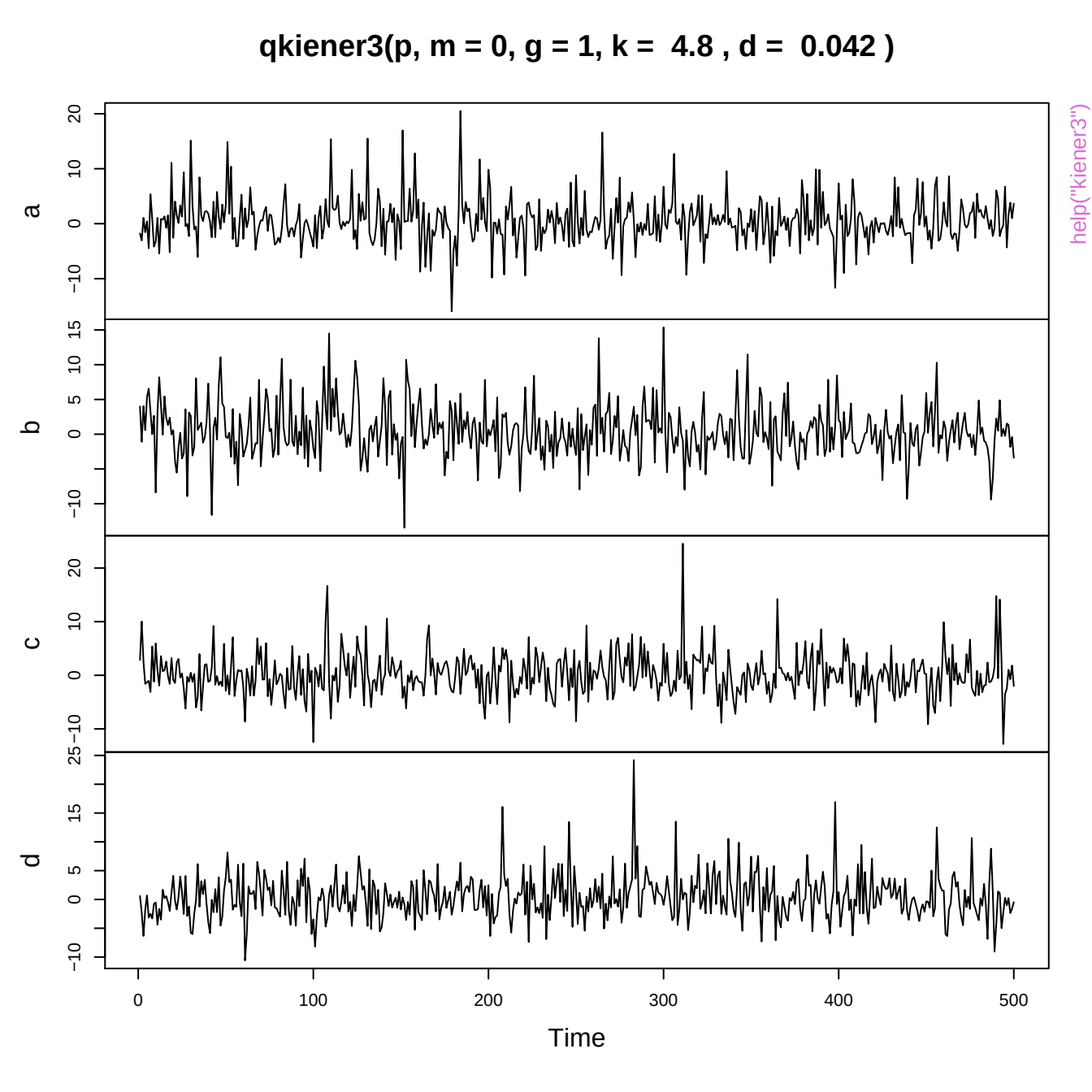

qkiener1, dpkiener1(p, m, g, k)
κ
0.6
1
1.5
2
3.2
10
p*(1−p)/2
0.12
0.08
0.04
0.00
−15
−10
−5
0
5
10
15

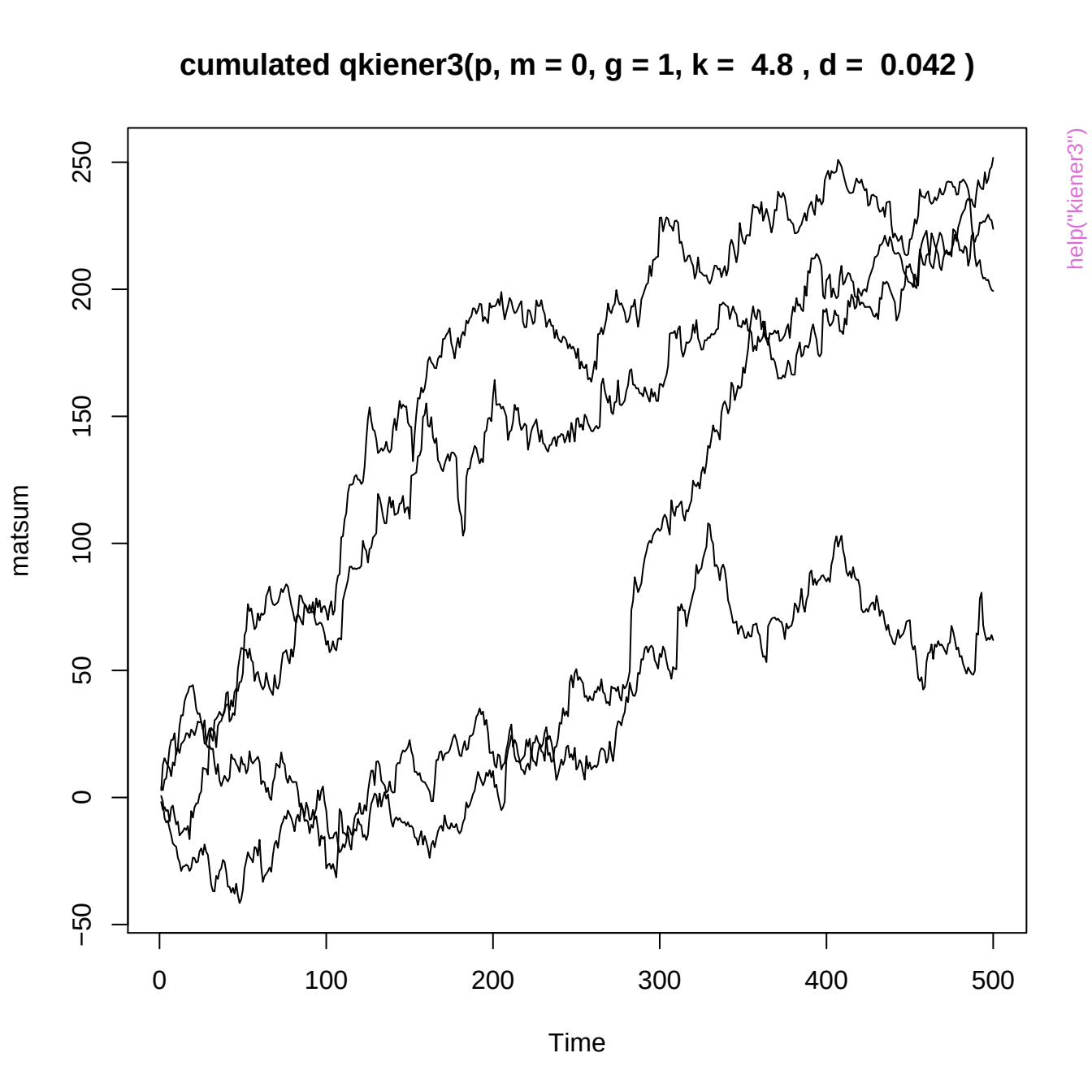

qkiener2(p, m = 0, g = 1, a = 6 , w = 4)
a
b
c
d
Time
0
100
200
300
400
500
help("kiener2")

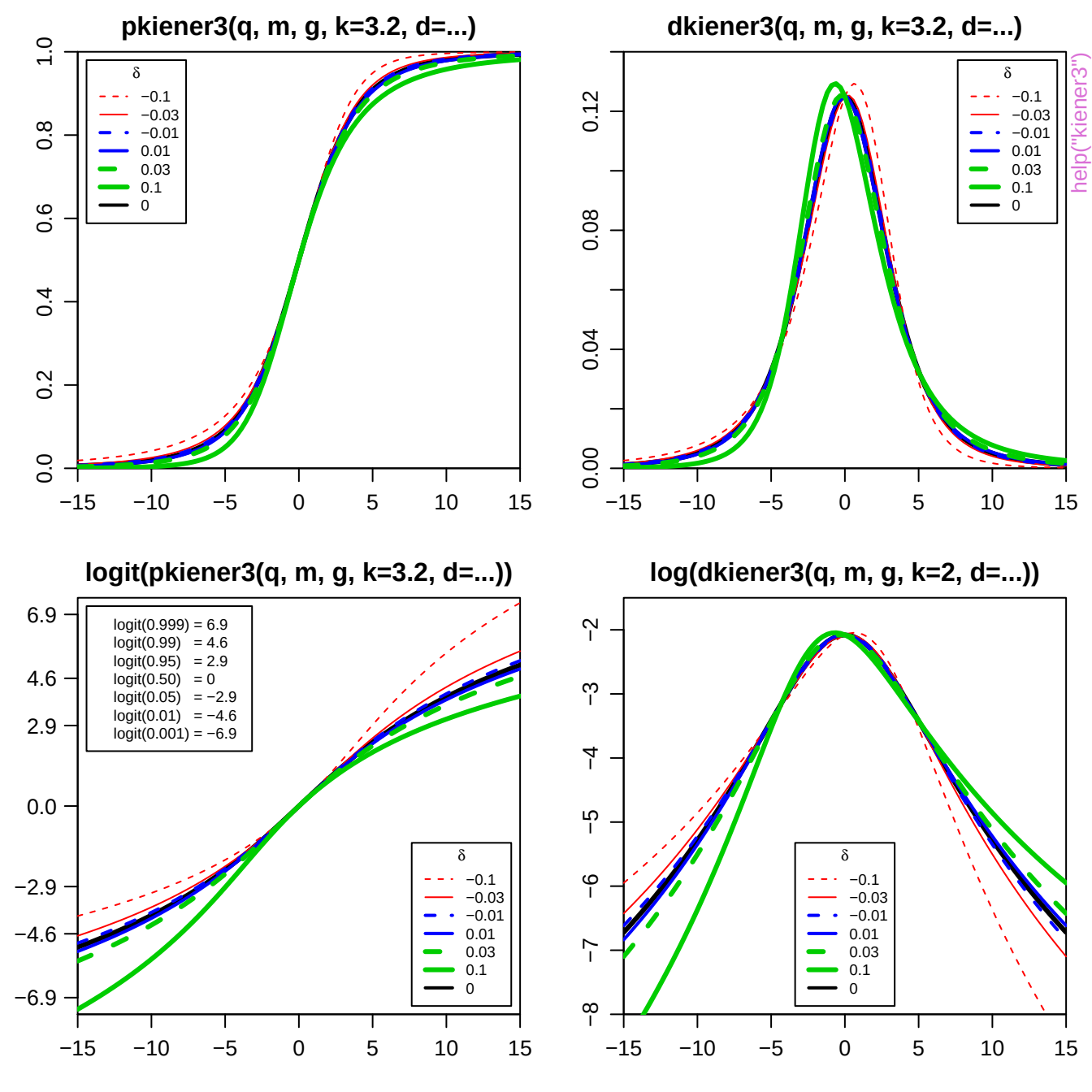

cumulated qkiener2(p, m = 0, g = 1, a = 6 , w = 4)
matsum
Time
−50
0
50
100
150
200
250
0
100
200
300
400
500
help("kiener2")

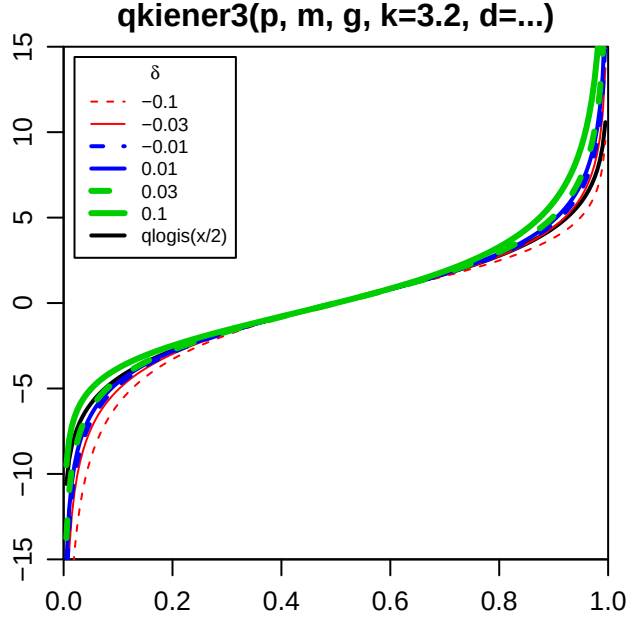

pkiener2(q, m, g, a=2, w=...)
dkiener2(q, m, g, a=2, w=...)
logit(pkiener2(q, m, g, a=2, w=...))
log(dkiener2(q, m, g, a=2, w=...))
ω
0.6
1
1.5
2
3.2
10
logit(0.999) = 6.9
logit(0.99) = 4.6
logit(0.95) = 2.9
logit(0.50) = 0
logit(0.05) = −2.9
logit(0.01) = −4.6
logit(0.001) = −6.9
help("kiener2")

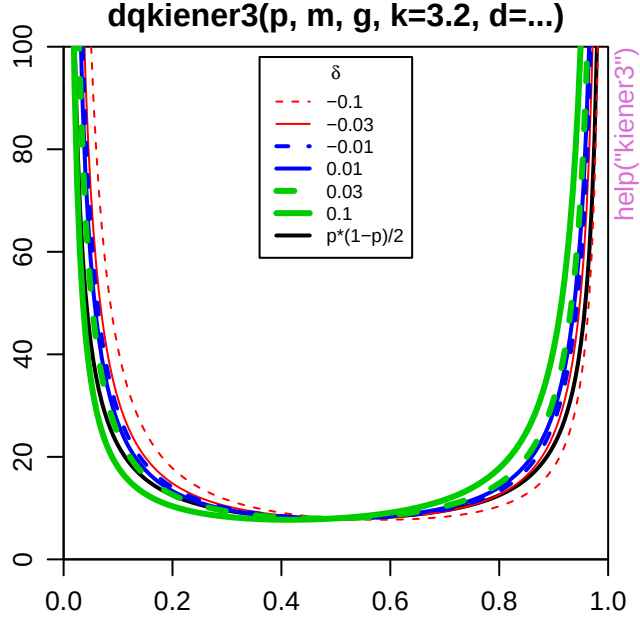

qkiener2(p, m, g, a=2, w=...)
dqkiener2(p, m, g, a=2, w=...)
qkiener2, dpkiener2(p, m, g, a=2, w=...)
inverse axis qkiener2(p, m, g, a=2, w=...)
ω
0.6
1
1.5
2
3.2
10
qlogis(x/2)
p*(1−p)/2
help("kiener2")

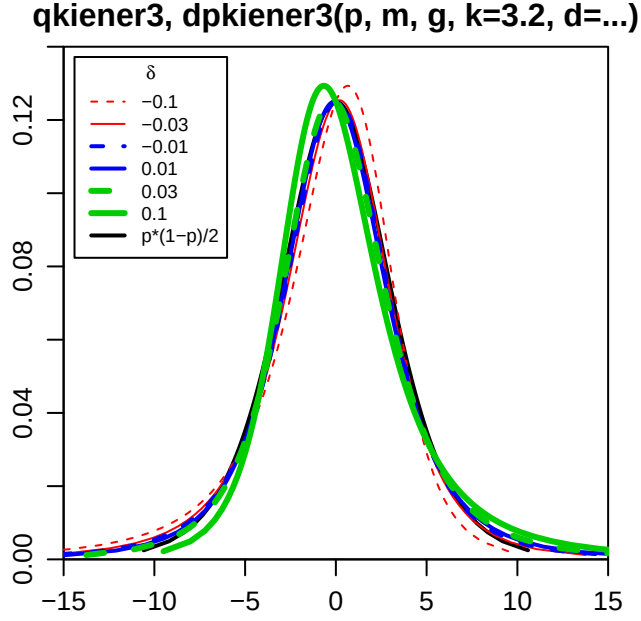

qkiener3(p, m = 0, g = 1, k = 4.8 , d = 0.042)
a
b
c
d
Time
help("kiener3")

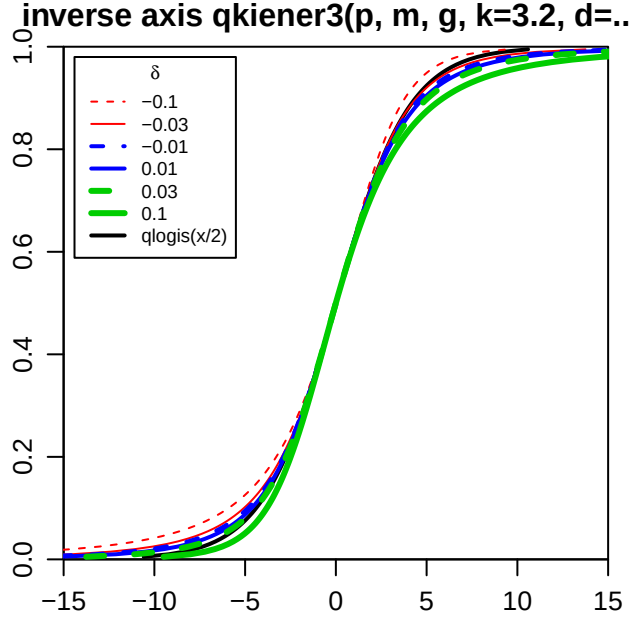

cumulated qkiener3(p, m = 0, g = 1, k = 4.8 , d = 0.042)
matsum
Time
−50
0
50
100
150
200
250
0
100
200
300
400
500
help("kiener3")

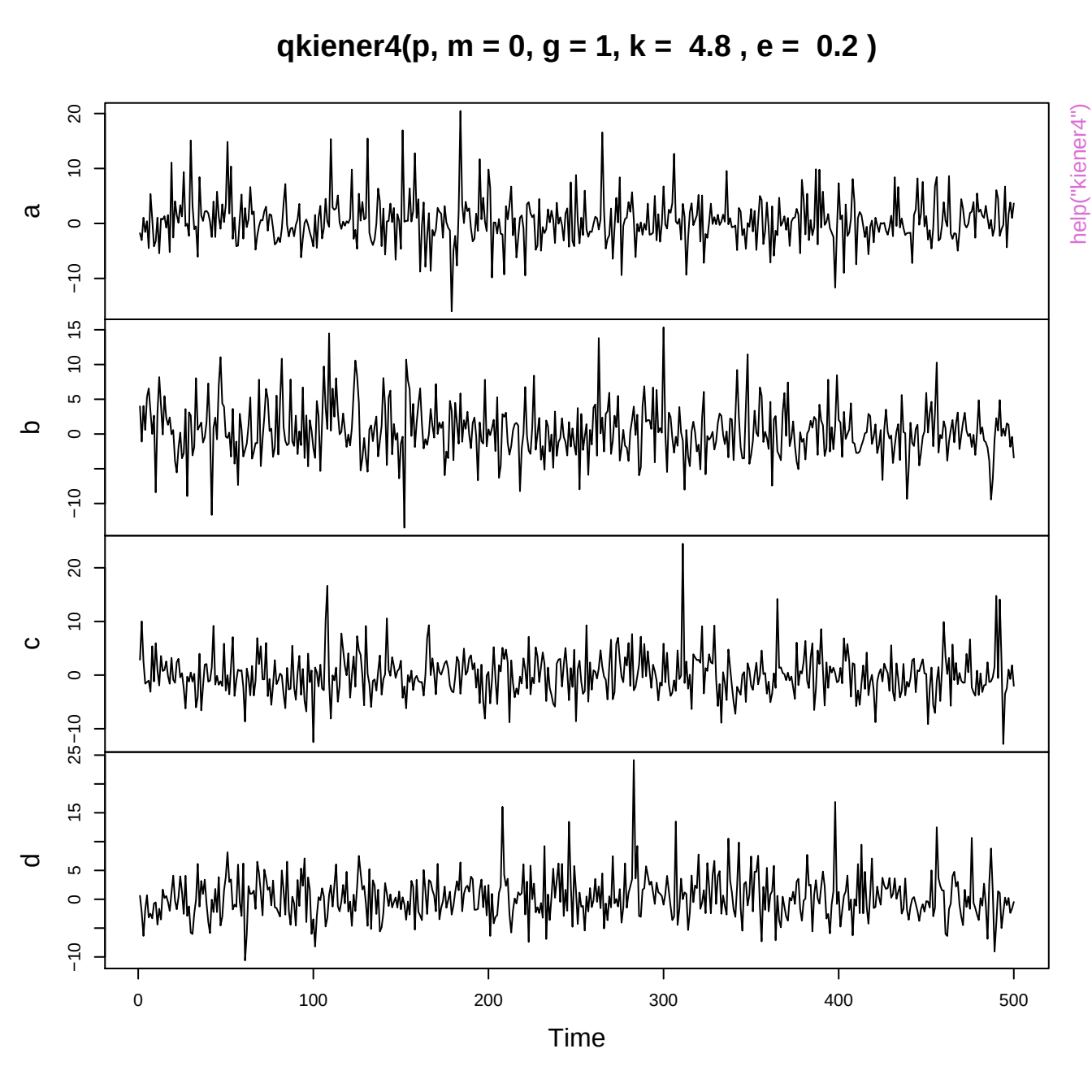

pkiener3(q, m, g, k=3.2, d=...)
dkiener3(q, m, g, k=3.2, d=...)
logit(pkiener3(q, m, g, k=3.2, d=...))
log(dkiener3(q, m, g, k=2, d=...))
δ
−0.1
−0.03
−0.01
0.01
0.03
0.1
0
logit(0.999) = 6.9
logit(0.99) = 4.6
logit(0.95) = 2.9
logit(0.50) = 0
logit(0.05) = −2.9
logit(0.01) = −4.6
logit(0.001) = −6.9
help("kiener3")

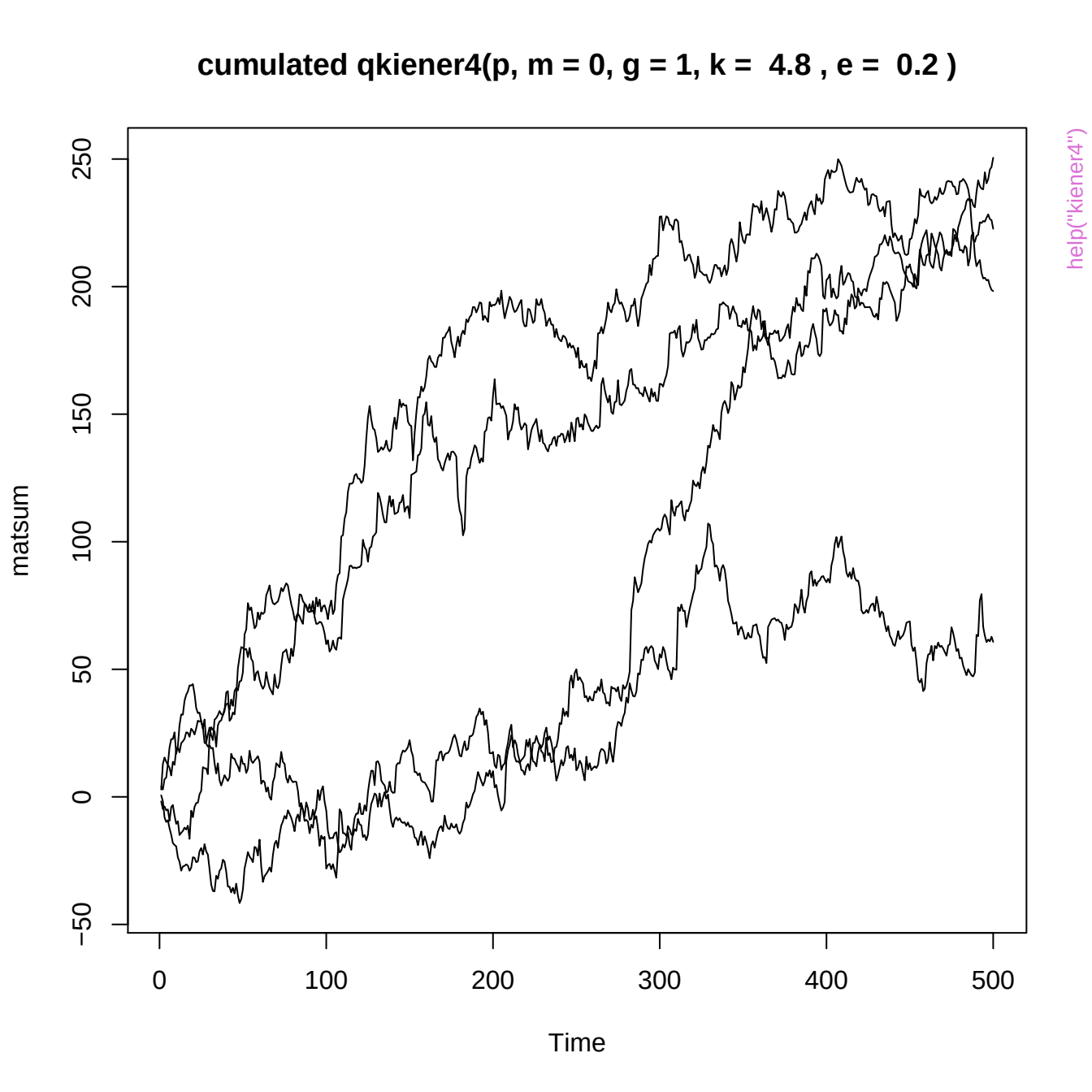

qkiener3(p, m, g, k=3.2, d=...)
δ
−0.1
−0.03
−0.01
0.01
0.03
0.1
qlogis(x/2)
15
10
5
0
−5
−10
−15
0.0
0.2
0.4
0.6
0.8
1.0

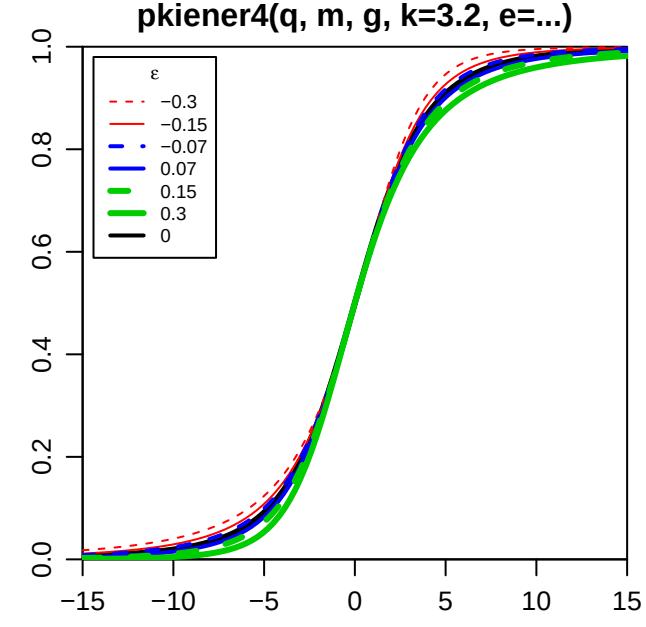

dqkiener3(p, m, g, k=3.2, d=...)
δ
−0.1
−0.03
−0.01
0.01
0.03
0.1
p*(1−p)/2
100
80
60
40
20
0
0.0
0.2
0.4
0.6
0.8
1.0
help("kiener3")

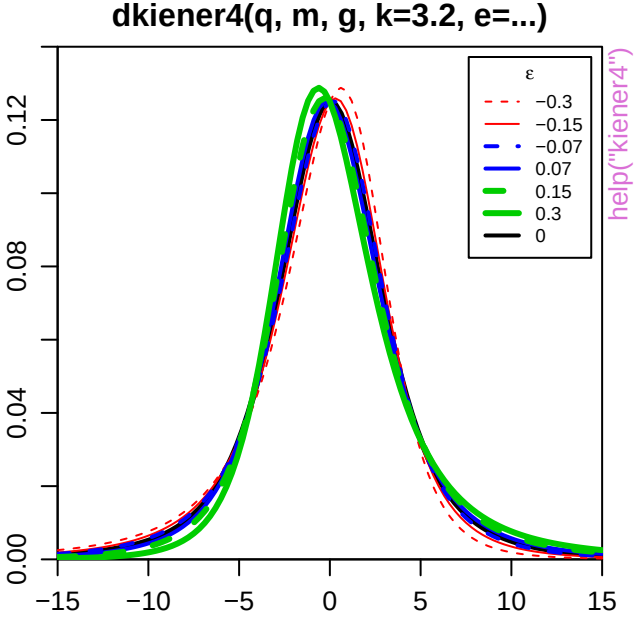

qkiener3, dpkiener3(p, m, g, k=3.2, d=...)
δ
−0.1
−0.03
−0.01
0.01
0.03
0.1
p*(1−p)/2
0.12
0.08
0.04
0.00
−15
−10
−5
0
5
10
15


inverse axis qkiener3(p, m, g, k=3.2, d=...
δ
−0.1
−0.03
−0.01
0.01
0.03
0.1
qlogis(x/2)
1.0
0.8
0.6
0.4
0.2
0.0
−15
−10
−5
0
5
10
15

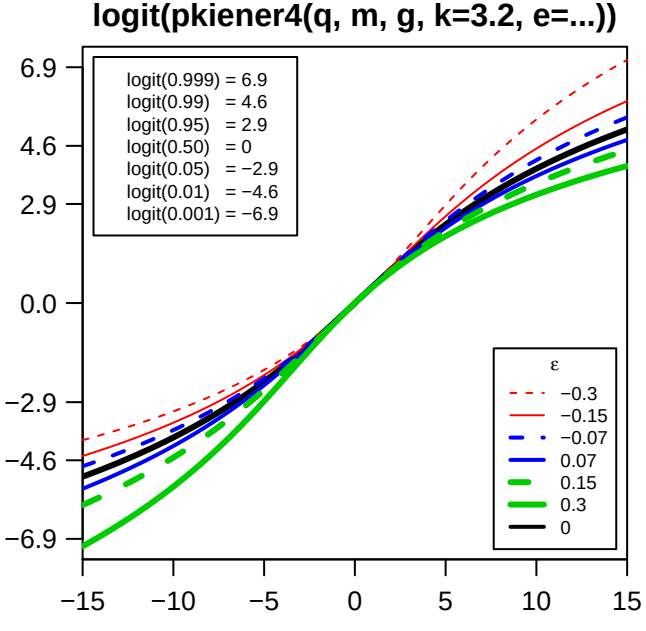

qkiener4(p, m = 0, g = 1, k = 4.8 , e = 0.2)
a
b
c
d
Time
0
100
200
300
400
500
help("kiener4")

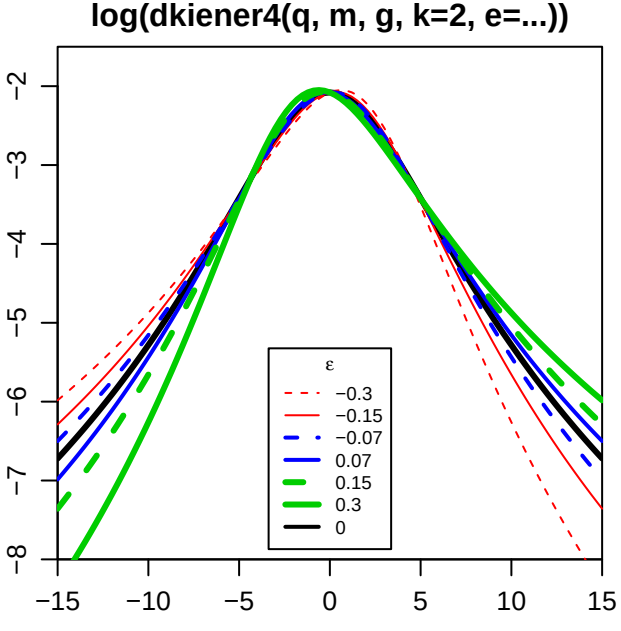

cumulated qkiener4(p, m = 0, g = 1, k = 4.8 , e = 0.2)
matsum
Time
−50
0
50
100
150
200
250
0
100
200
300
400
500
help("kiener4")

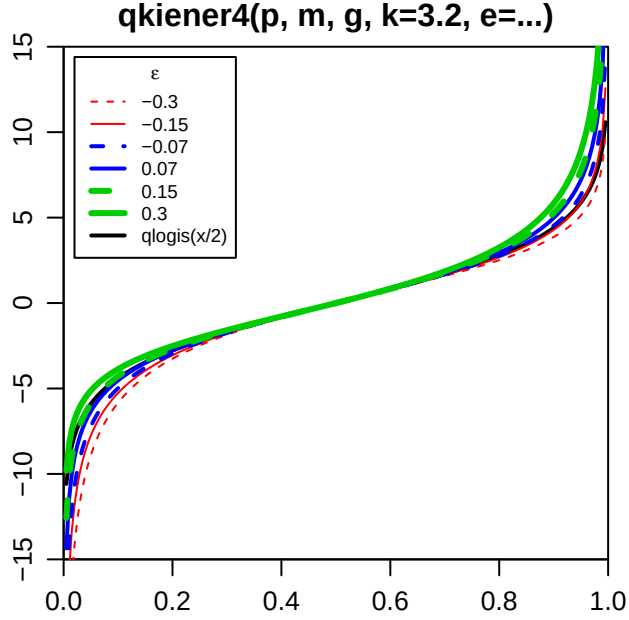


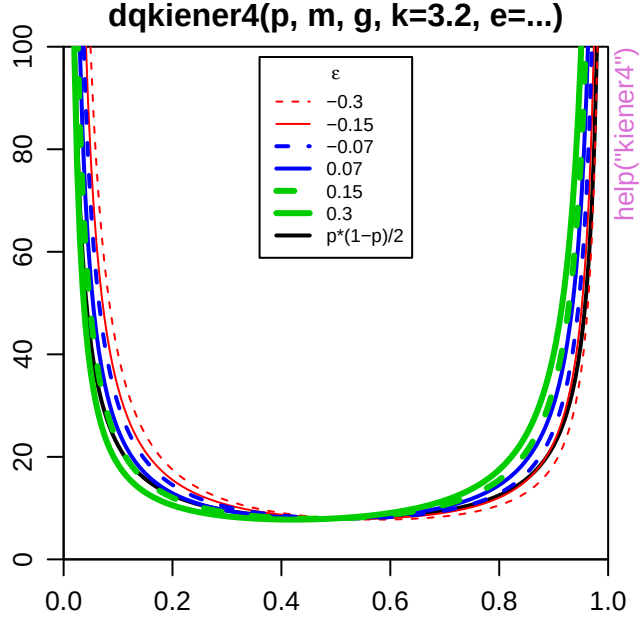


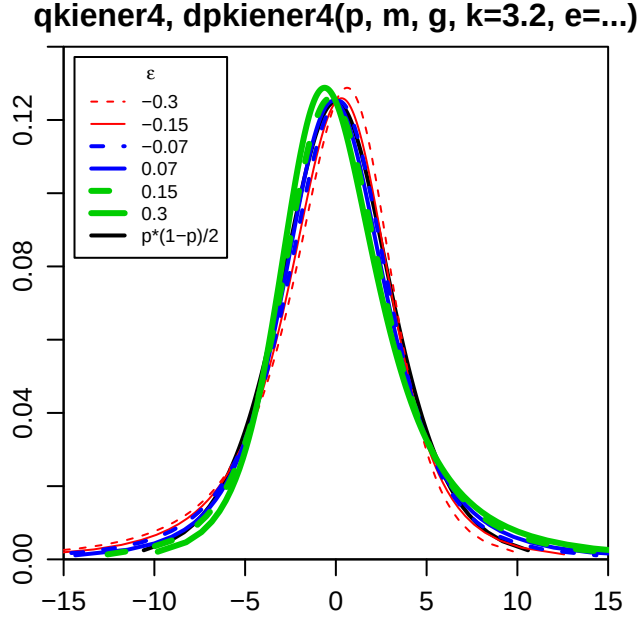
help("kiener4")

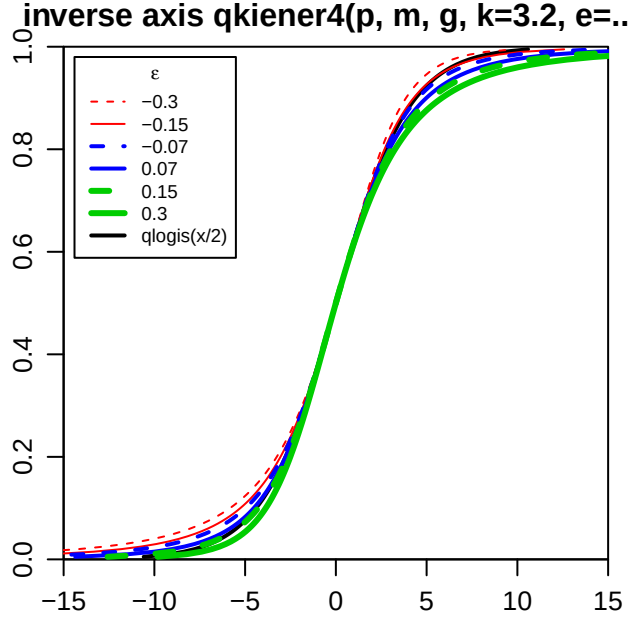


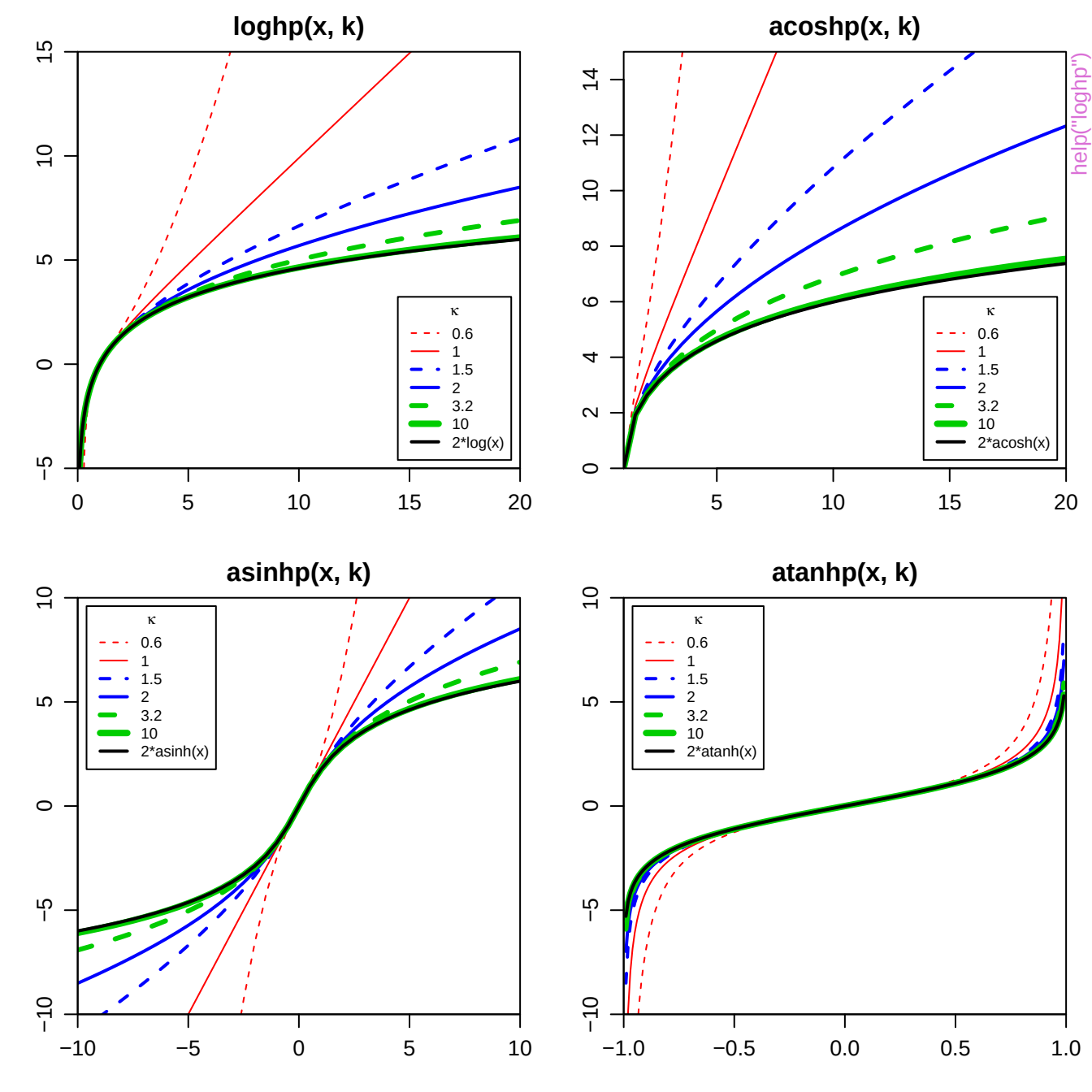


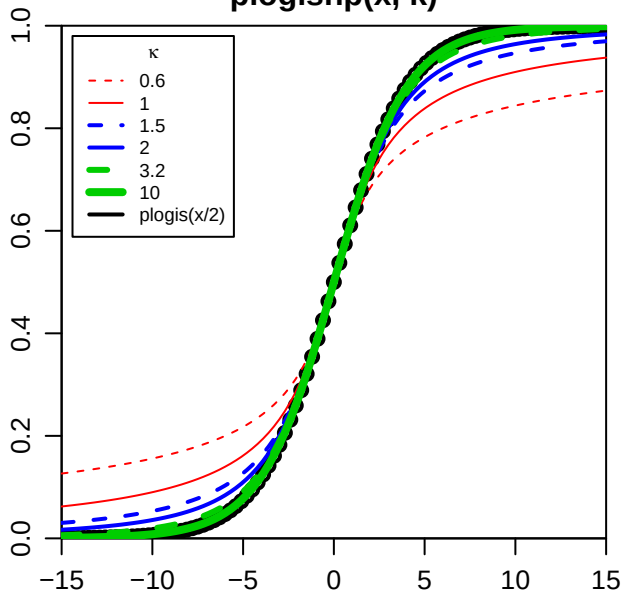

qkiener4(p, m, g, k=3.2, e=...)
ε
−0.3
−0.15
−0.07
0.07
0.15
0.3
qlogis(x/2)
15
10
5
0
−5
−10
−15
0.0
0.2
0.4
0.6
0.8
1.0

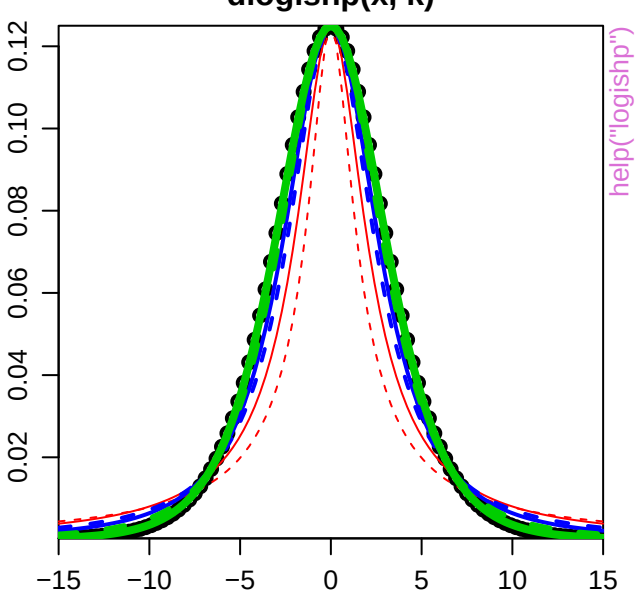

dqkiener4(p, m, g, k=3.2, e=...)
ε
−0.3
−0.15
−0.07
0.07
0.15
0.3
p*(1−p)/2
100
80
60
40
20
0
0.0
0.2
0.4
0.6
0.8
1.0
help("kiener4")

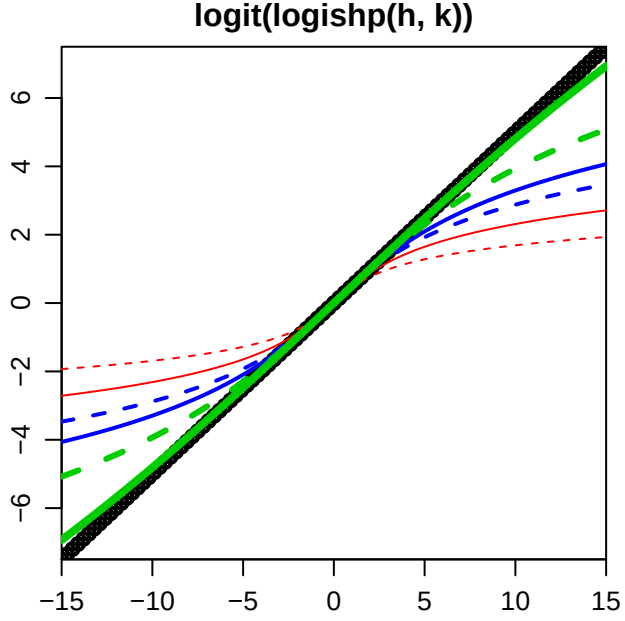

qkiener4, dpkiener4(p, m, g, k=3.2, e=...)
ε
−0.3
−0.15
−0.07
0.07
0.15
0.3
p*(1−p)/2
0.12
0.08
0.04
0.00
−15
−10
−5
0
5
10
15

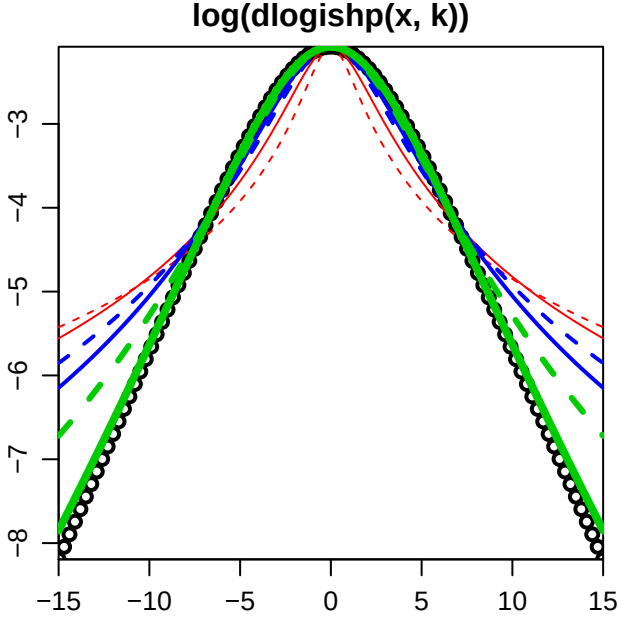

inverse axis qkiener4(p, m, g, k=3.2, e=...)
ε
−0.3
−0.15
−0.07
0.07
0.15
0.3
qlogis(x/2)
1.0
0.8
0.6
0.4
0.2
0.0
−15
−10
−5
0
5
10
15

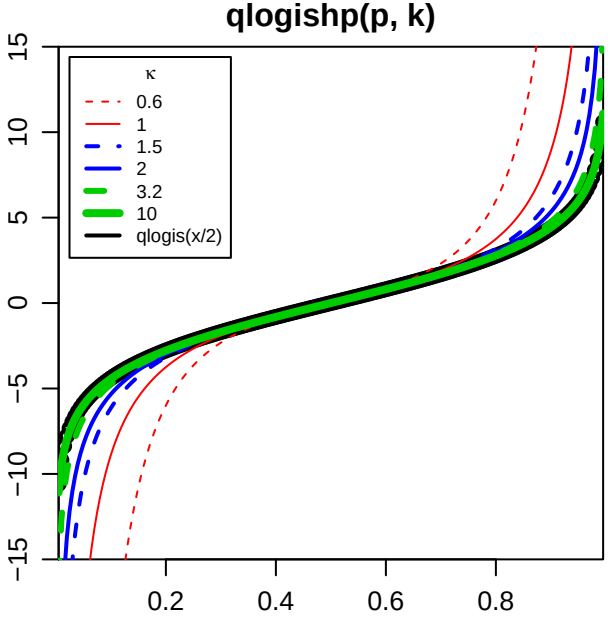

loghp(x, k)
κ
0.6
1
1.5
2
3.2
10
2*log(x)
acoshp(x, k)
κ
0.6
1
1.5
2
3.2
10
2*acosh(x)
help("loghp")
asinhp(x, k)
κ
0.6
1
1.5
2
3.2
10
2*asinh(x)
atanhp(x, k)
κ
0.6
1
1.5
2
3.2
10
2*atanh(x)

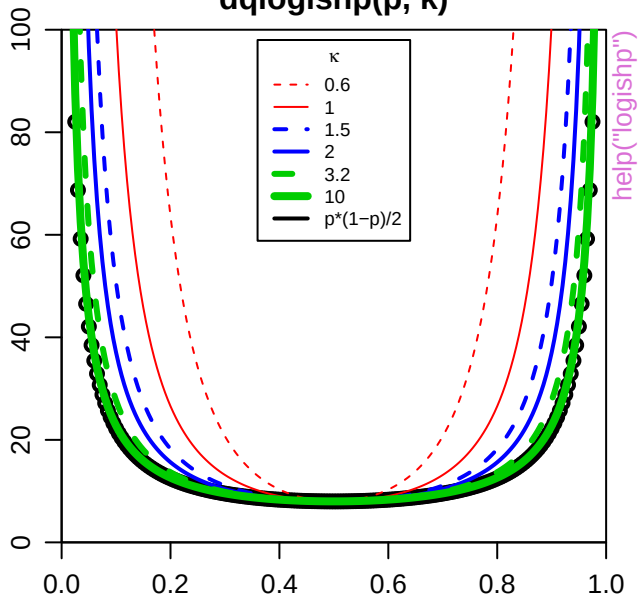

plogishp(x, k)
κ
0.6
1
1.5
2
3.2
10
plogis(x/2)
0.0
0.2
0.4
0.6
0.8
1.0
−15
−10
−5
0
5
10
15

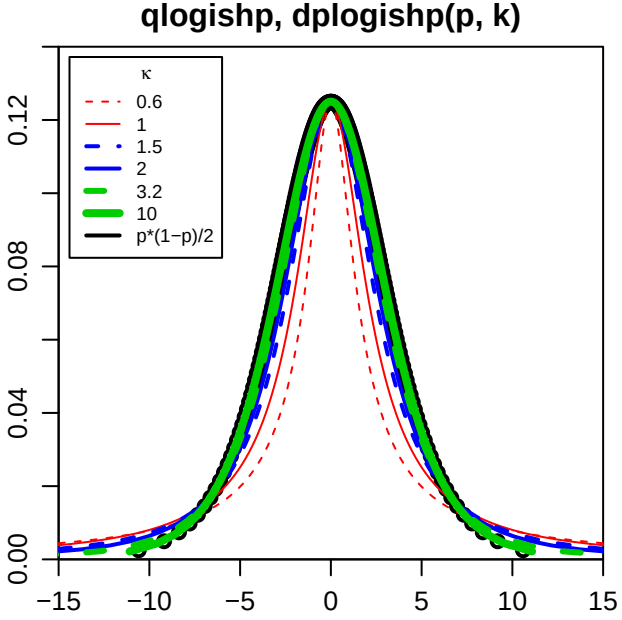

dlogishp(x, k)
help("logishp")
0.02
0.04
0.06
0.08
0.10
0.12
−15
−10
−5
0
5
10
15

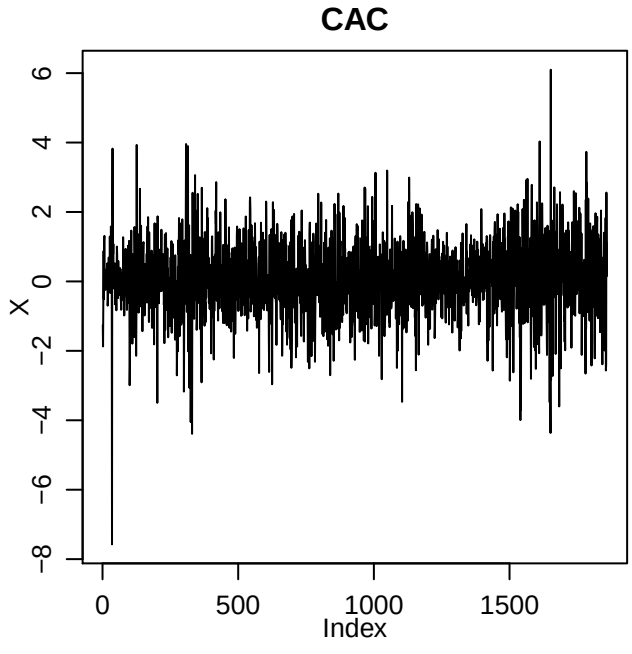

logit(logishp(h, k))
−6
−4
−2
0
2
4
6
−15
−10
−5
0
5
10
15

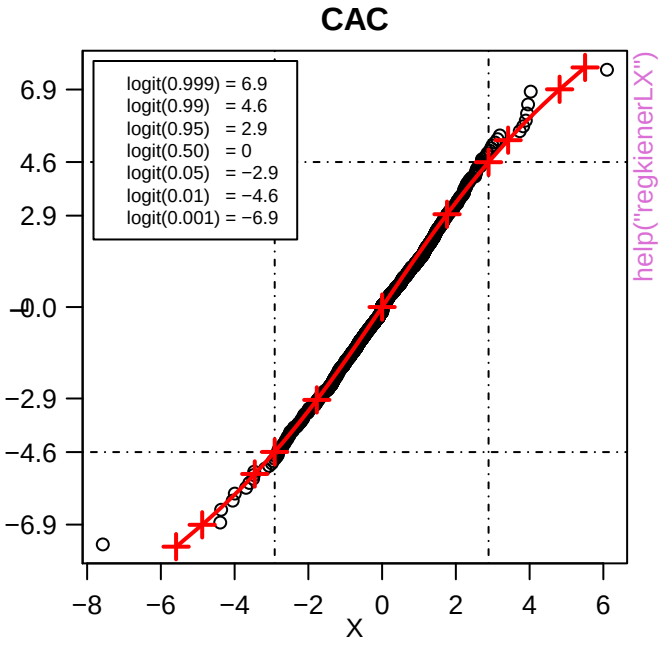

log(dlogishp(x, k))
−3
−4
−5
−6
−7
−8
−15
−10
−5
0
5
10
15

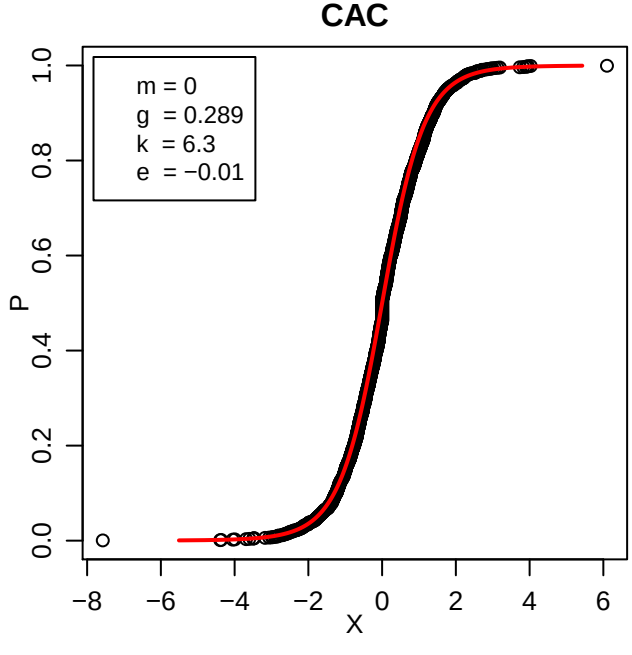

qlogishp(p, k)
κ
0.6
1
1.5
2
3.2
10
qlogis(x/2)
15
10
5
0
−5
−10
−15
0.2
0.4
0.6
0.8

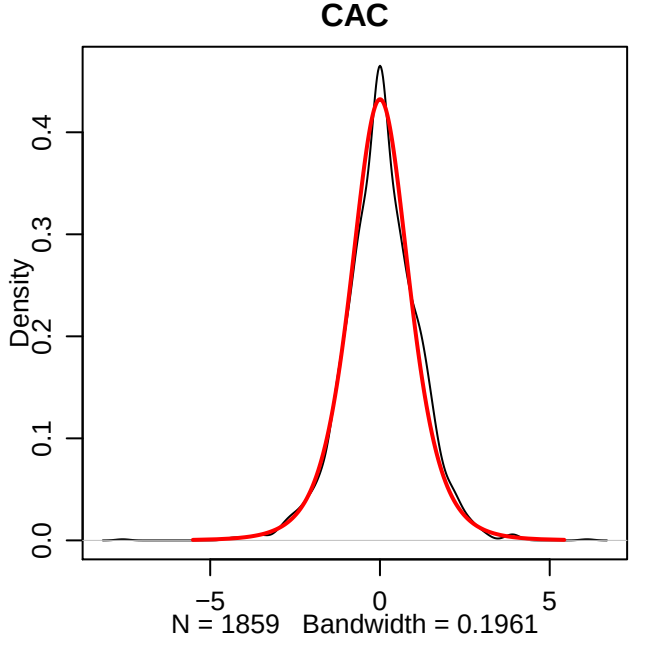

dqlogishp(p, k)
κ
0.6
1
1.5
2
3.2
10
p*(1−p)/2
100
80
60
40
20
0
0.0
0.2
0.4
0.6
0.8
1.0
help("logishp")


qlogishp, dplogishp(p, k)
κ
0.6
1
1.5
2
3.2
10
p*(1−p)/2
0.12
0.08
0.04
0.00
−15
−10
−5
0
5
10
15


CAC
X
Index
6
4
2
0
−2
−4
−6
−8
0
500
1000
1500


CAC
logit(0.999) = 6.9
logit(0.99) = 4.6
logit(0.95) = 2.9
logit(0.50) = 0
logit(0.05) = −2.9
logit(0.01) = −4.6
logit(0.001) = −6.9
X
help("regkienerLX")
6.9
4.6
2.9
0.0
−2.9
−4.6
−6.9
−8
−6
−4
−2
0
2
4
6


CAC
m = 0
g = 0.289
k = 6.3
e = −0.01
P
X
1.0
0.8
0.6
0.4
0.2
0.0
−8
−6
−4
−2
0
2
4
6


CAC
Density
N = 1859 Bandwidth = 0.1961
0.4
0.3
0.2
0.1
0.0
−5
0
5