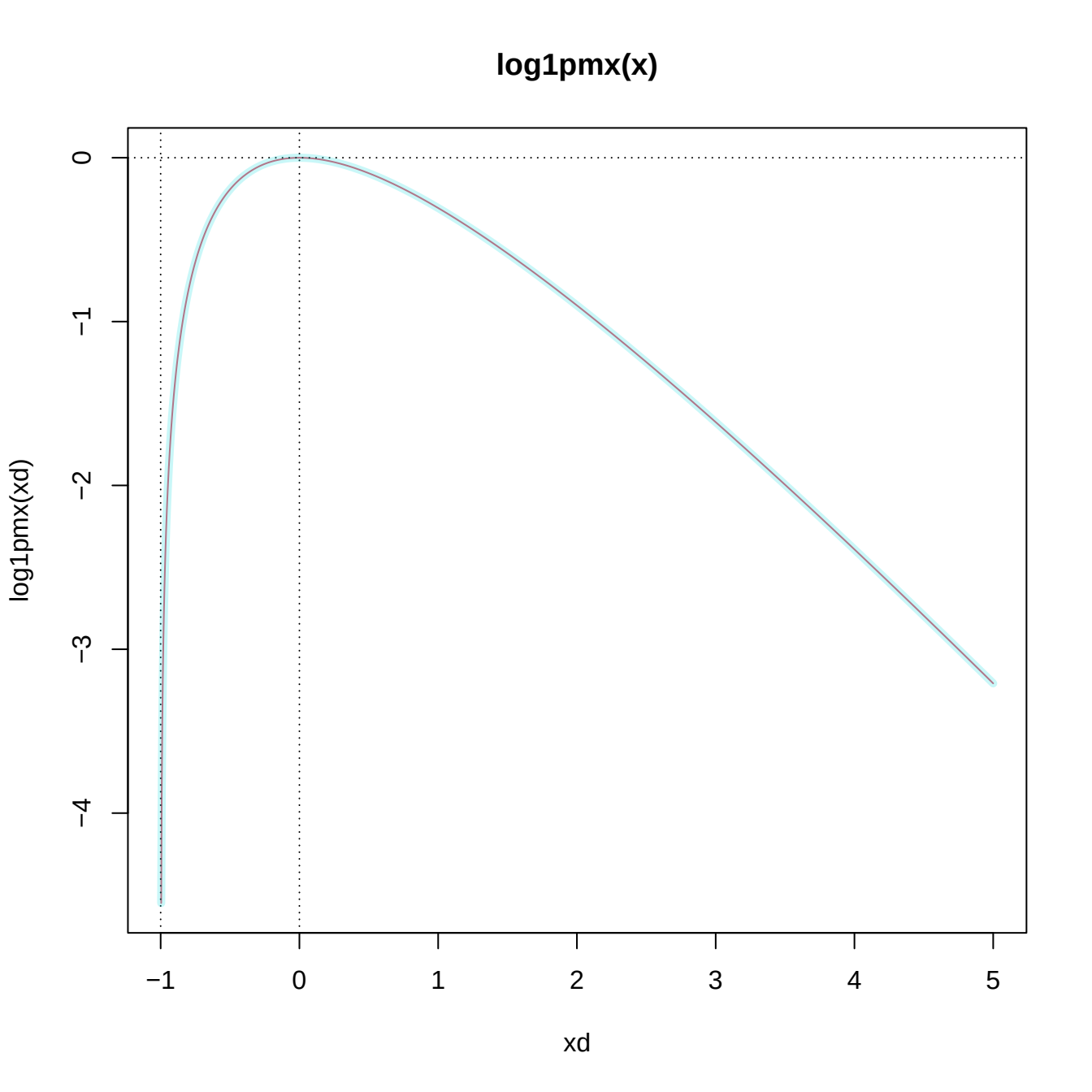
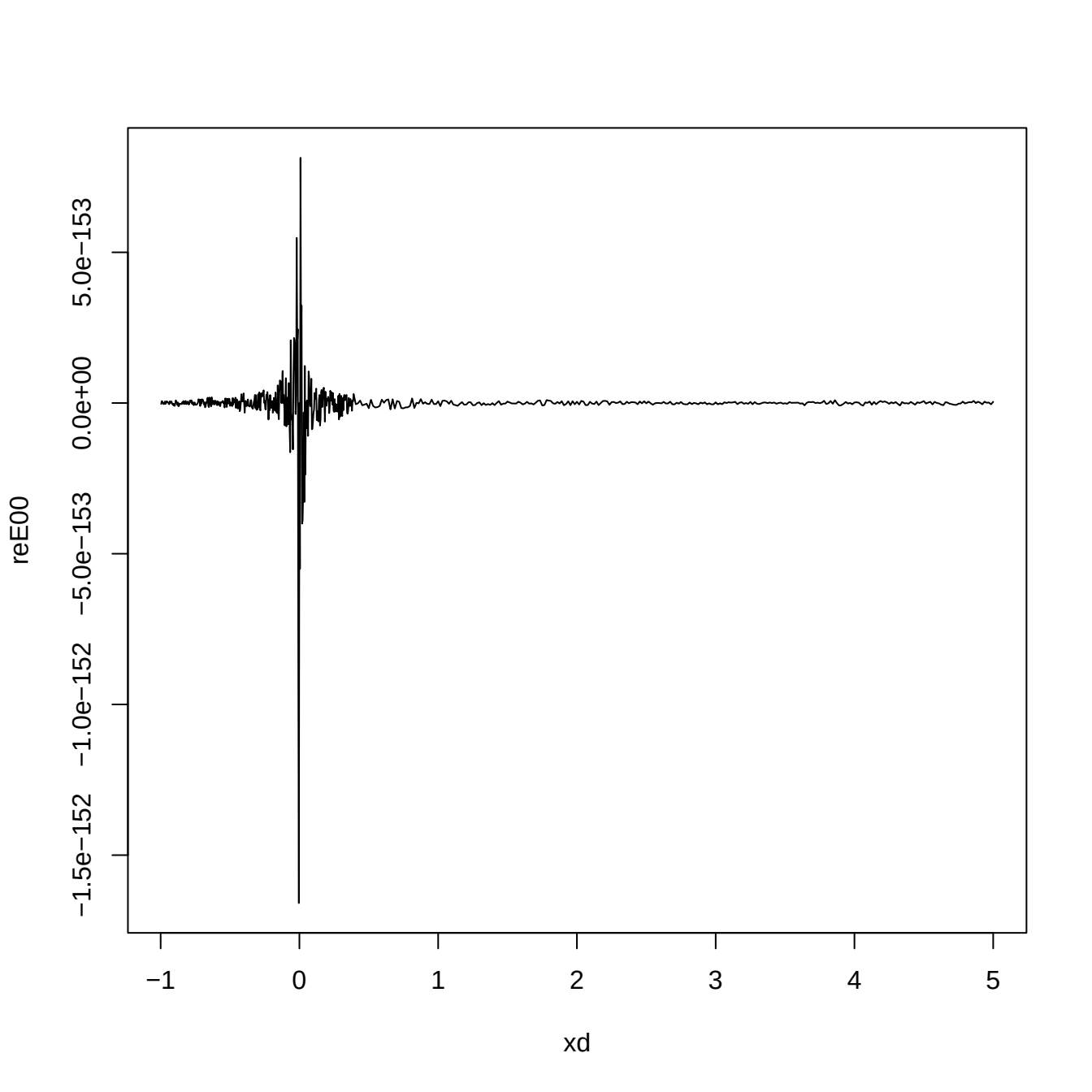
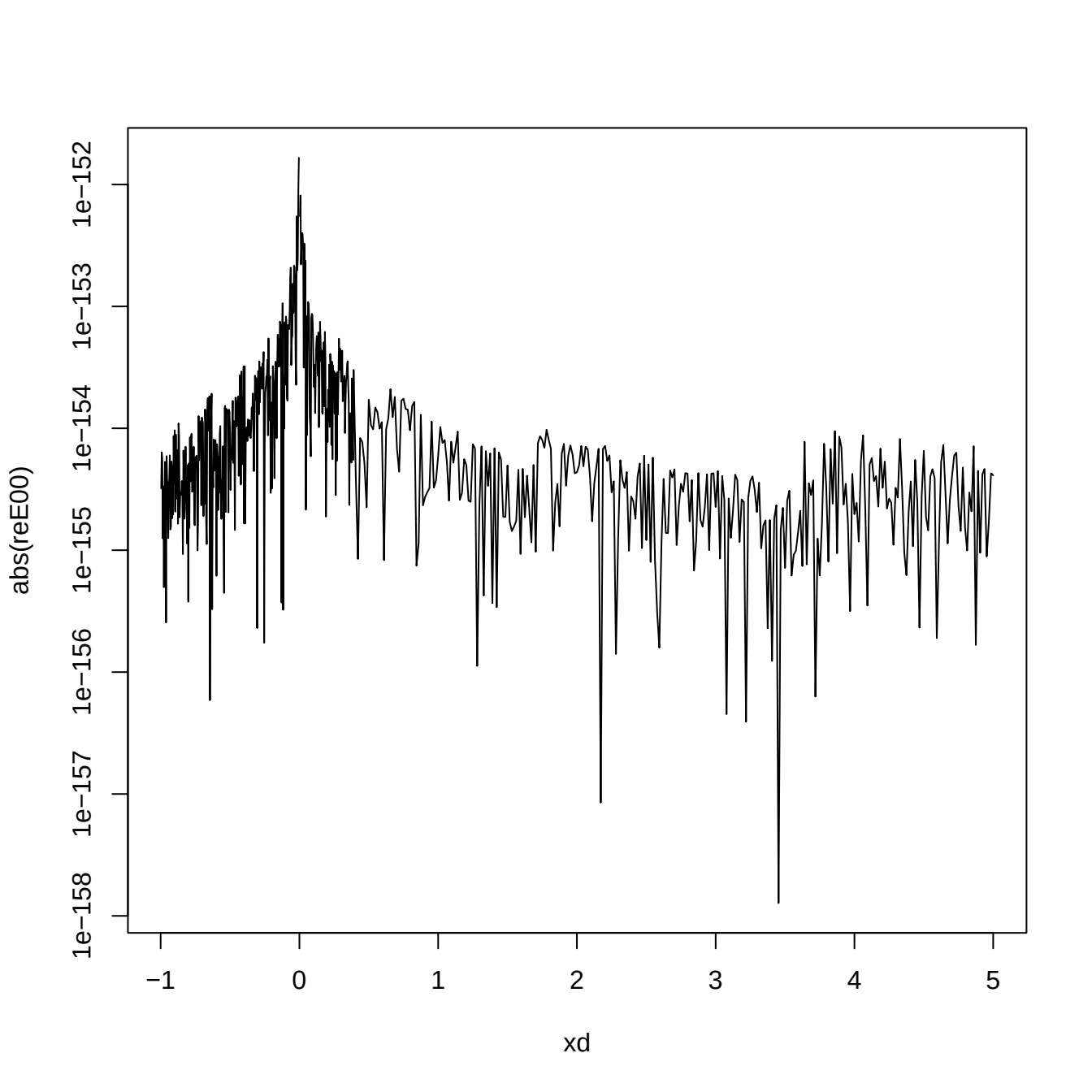
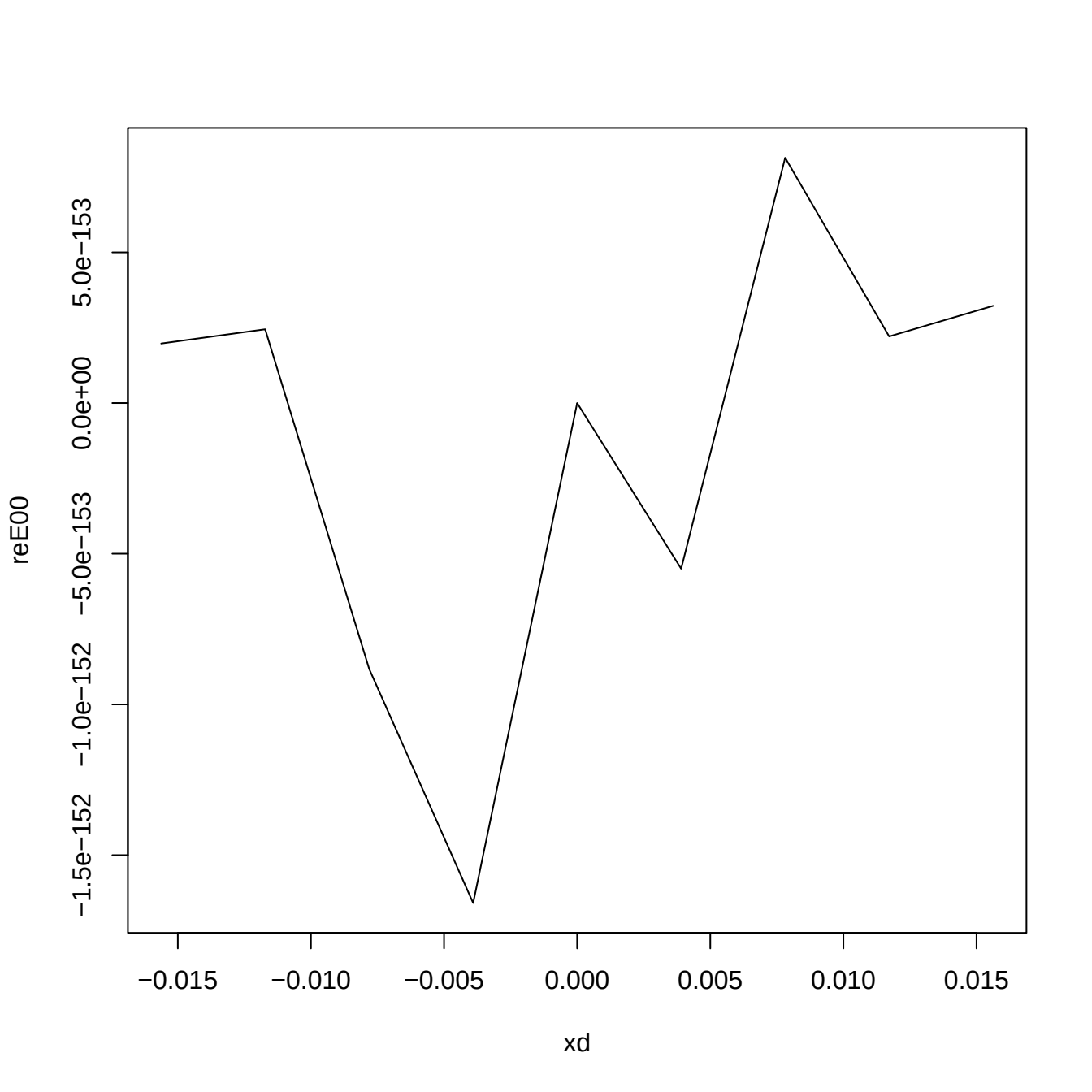
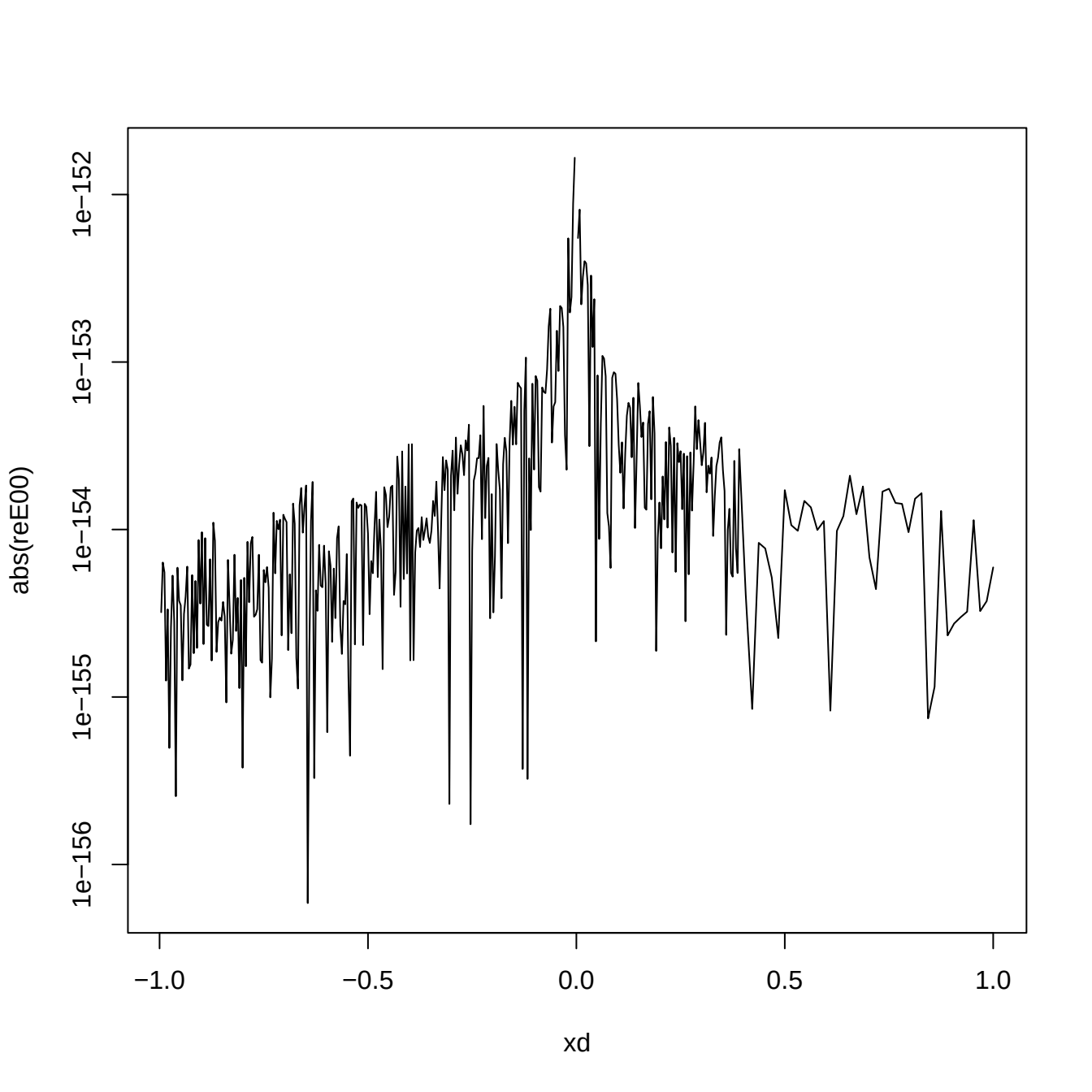
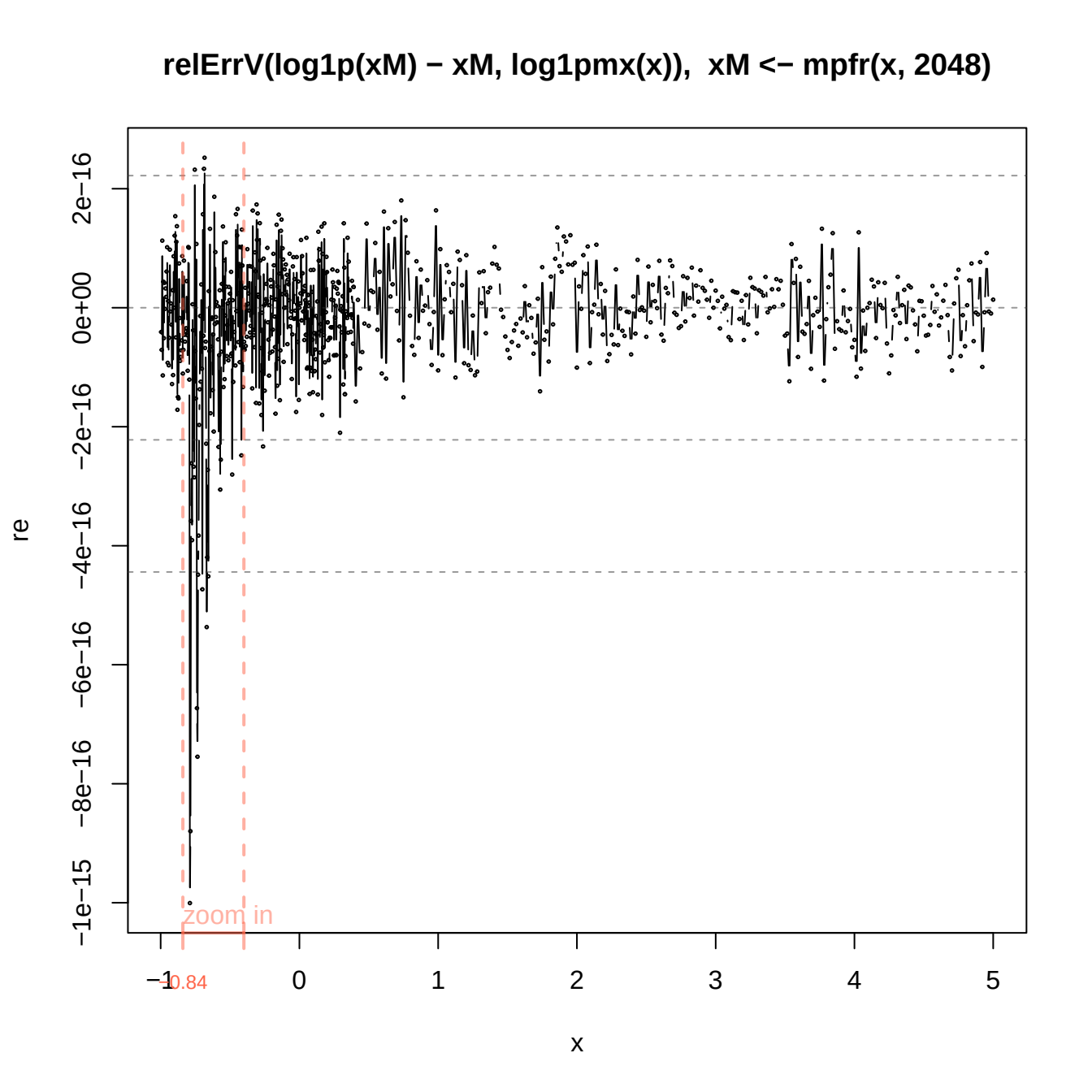

log1pmx(x)
log1pmx(xd)
xd
0
−1
−2
−3
−4
−1
0
1
2
3
4
5

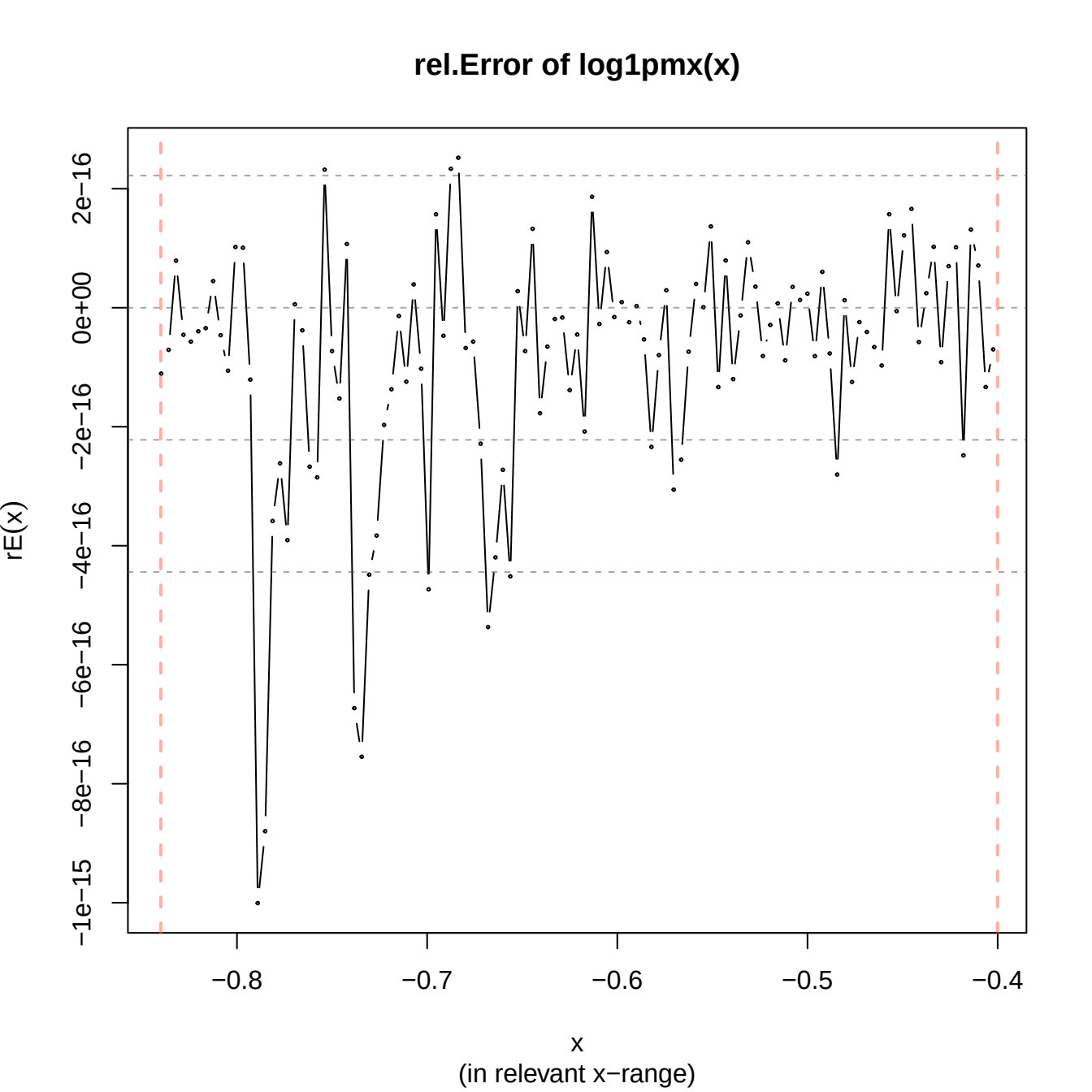

reE00
5.0e−153
0.0e+00
−5.0e−153
−1.0e−152
−1.5e−152
−1
0
1
2
3
4
5
xd

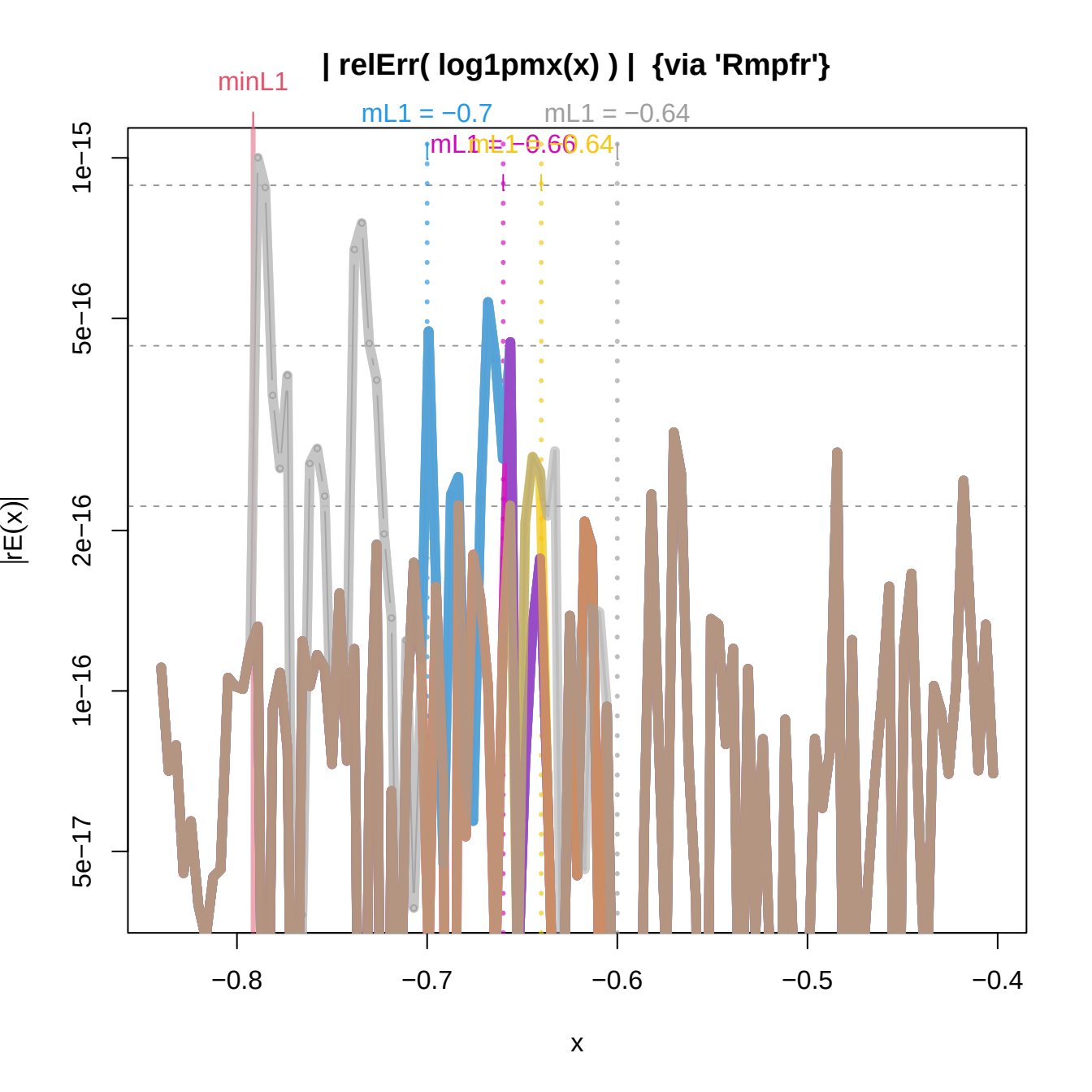

abs(reE00)
1e−152
1e−153
1e−154
1e−155
1e−156
1e−157
1e−158
−1
0
1
2
3
4
5
xd

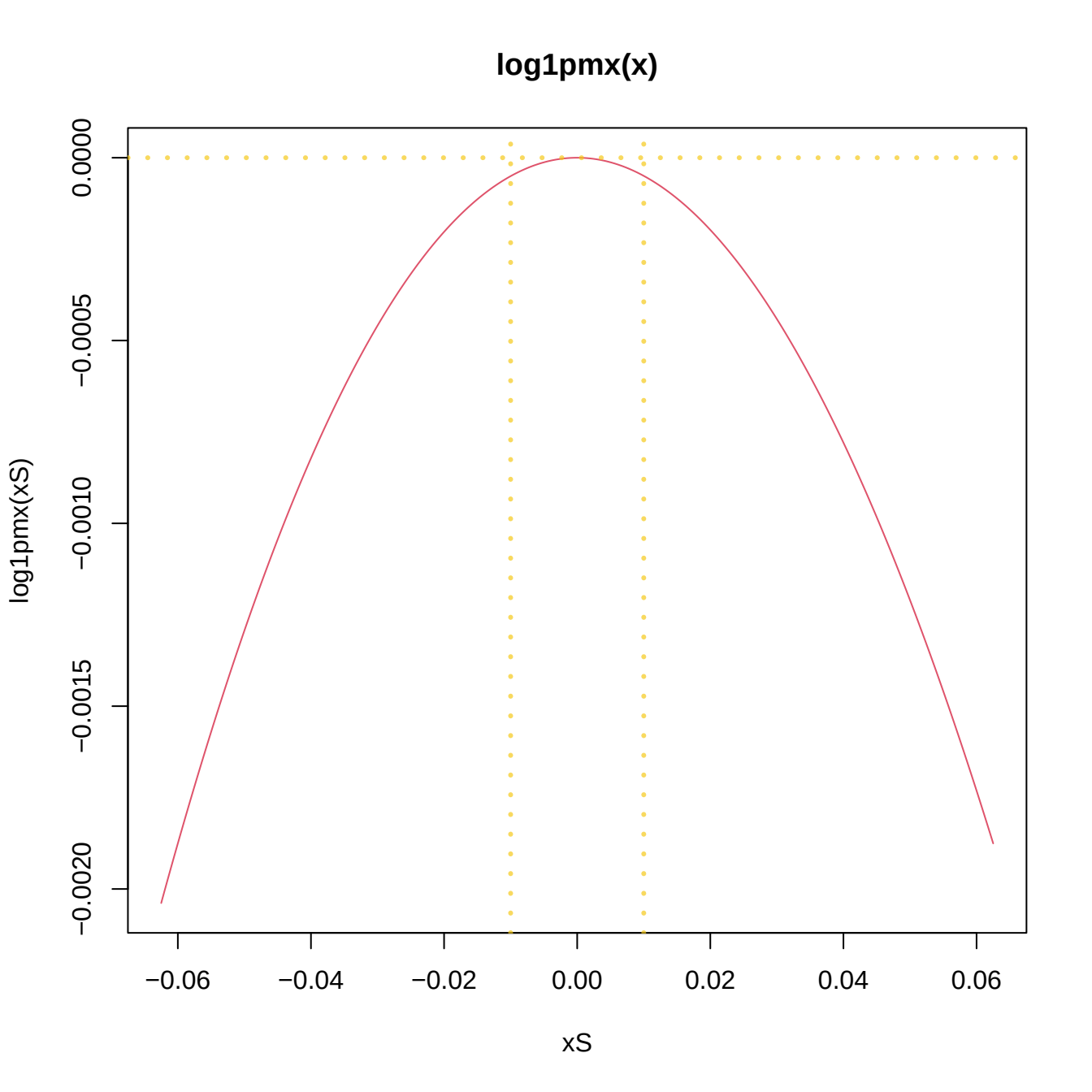

reE00
−1.5e−152
−1.0e−152
−5.0e−153
0.0e+00
5.0e−153
−0.015
−0.010
−0.005
0.000
0.005
0.010
0.015
xd

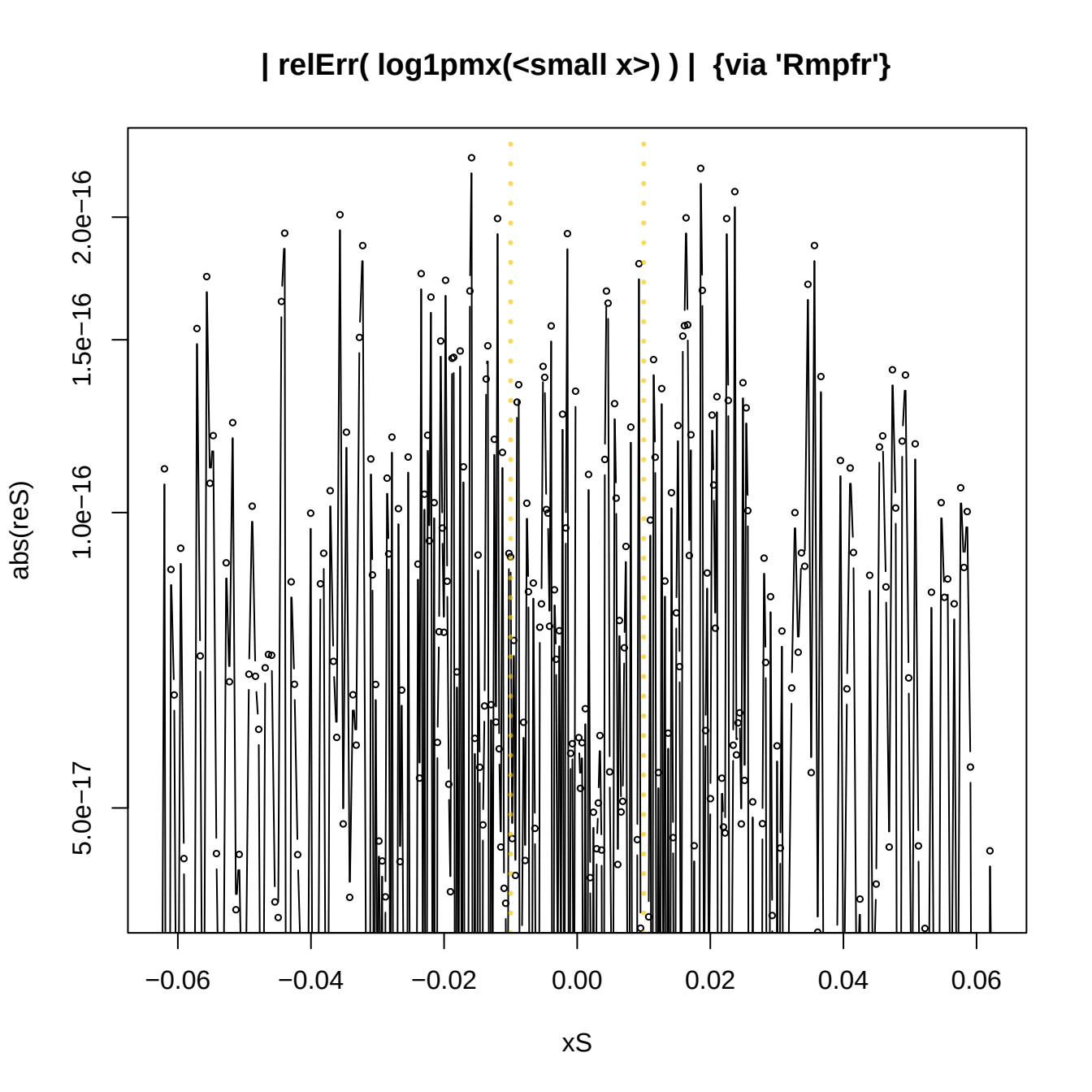

abs(reE00)
1e−152
1e−153
1e−154
1e−155
1e−156
−1.0
−0.5
0.0
0.5
1.0
xd

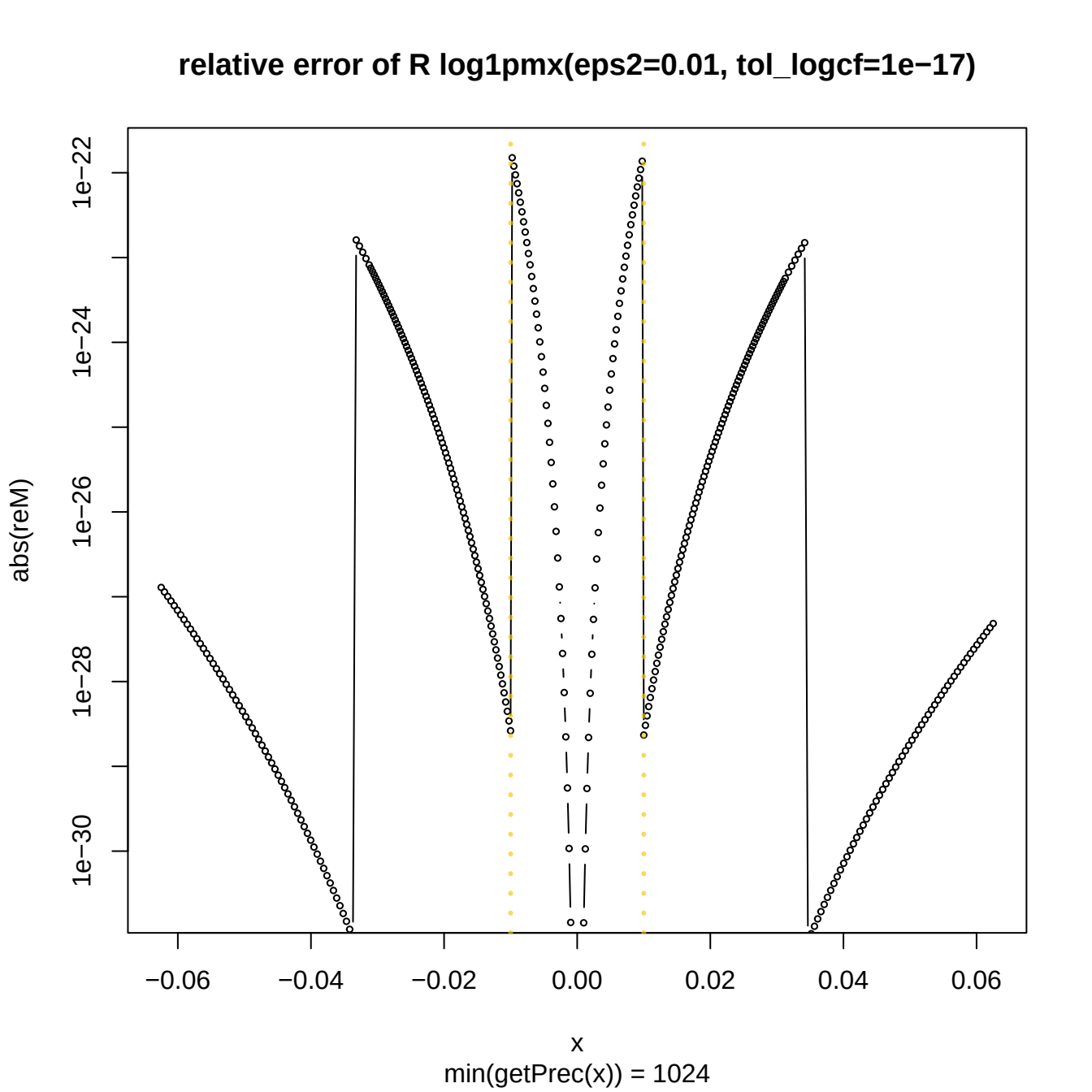

relErrV(log1p(xM) − xM, log1pmx(x)), xM <− mpfr(x, 2048)
re
2e−16
0e+00
−2e−16
−4e−16
−6e−16
−8e−16
−1e−15
zoom in
−0.84
−1
0
1
2
3
4
5
x

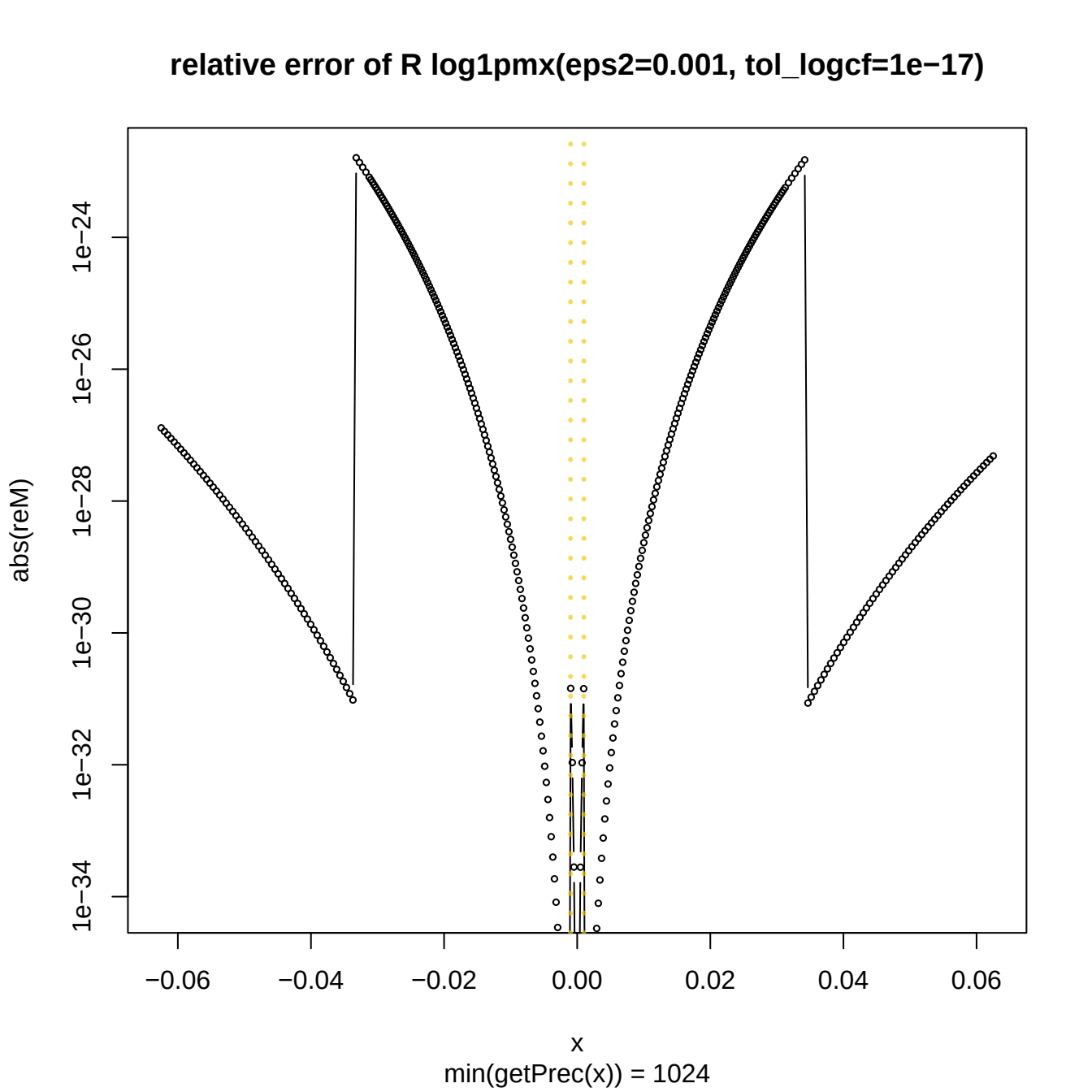

rel.Error of log1pmx(x)
rE(x)
2e−16
0e+00
−2e−16
−4e−16
−6e−16
−8e−16
−1e−15
−0.8
−0.7
−0.6
−0.5
−0.4
x
(in relevant x−range)

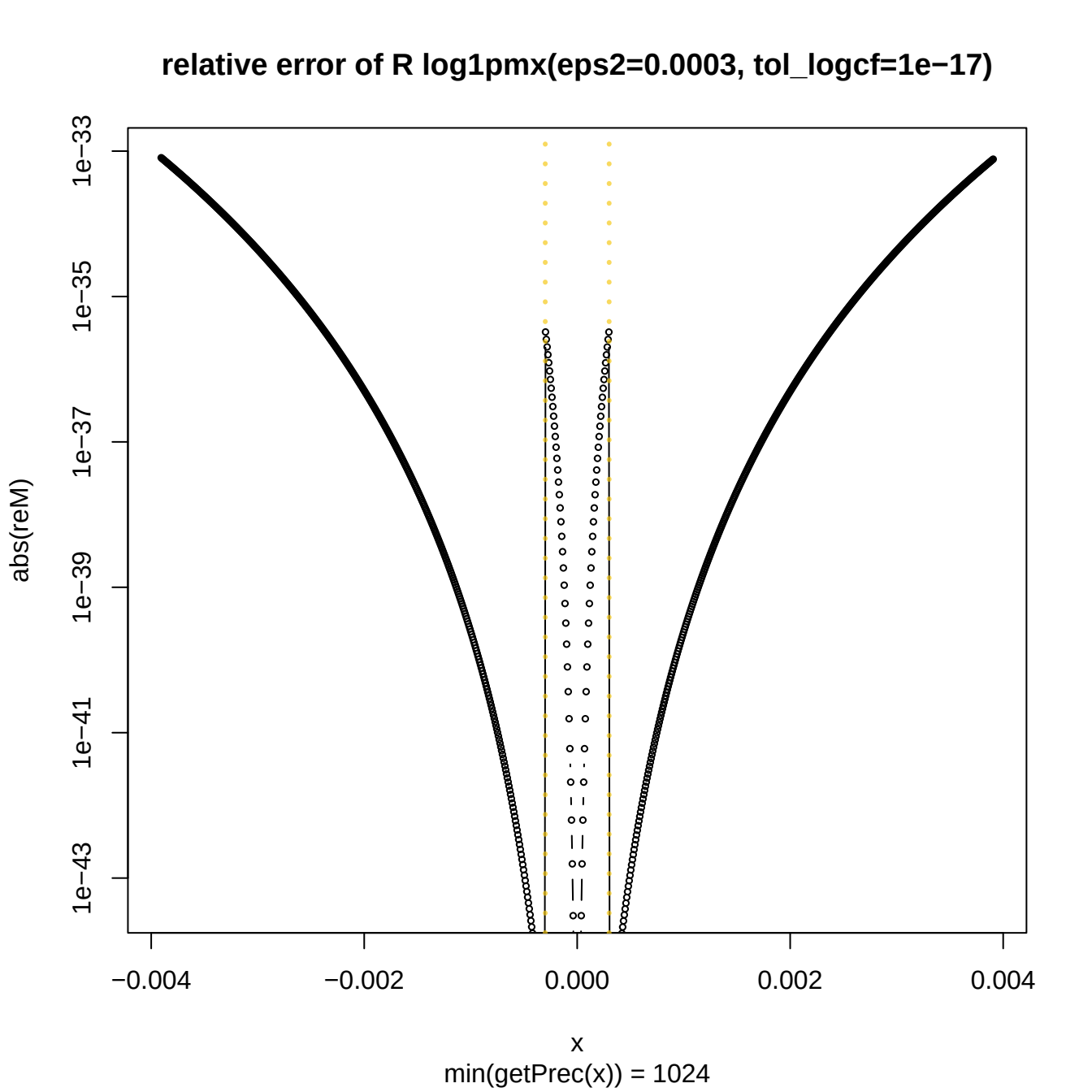

| relErr(log1pmx(x)) | {via 'Rmpfr'}
minL1
mL1 = −0.7
mL1 = −0.64
mL1 = −0.66
|rE(x)|
1e−15
5e−16
2e−16
1e−16
5e−17
−0.8
−0.7
−0.6
−0.5
−0.4
x

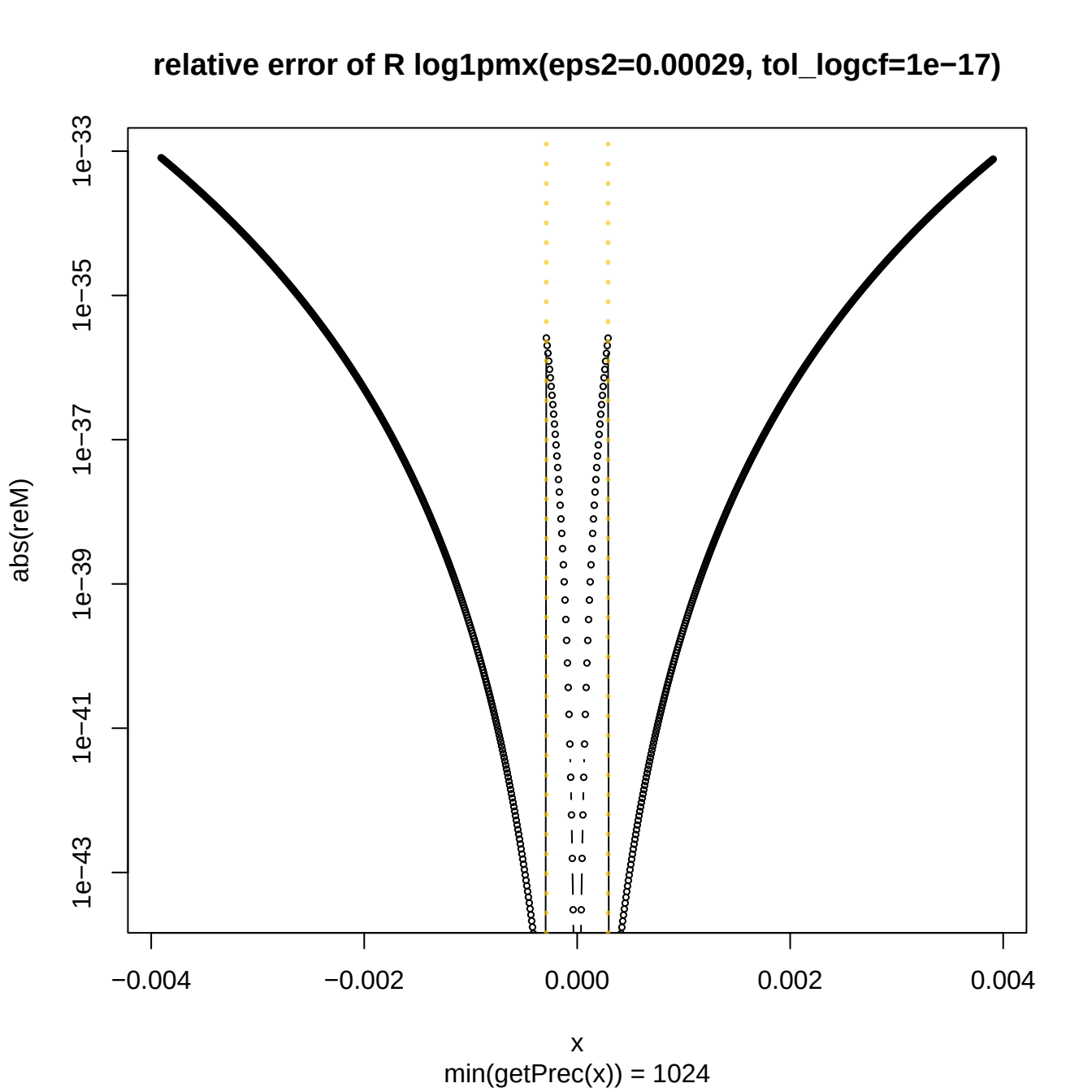

log1pmx(x)
log1pmx(xS)
0.0000
−0.0005
−0.0010
−0.0015
−0.0020
−0.06
−0.04
−0.02
0.00
0.02
0.04
0.06
xS

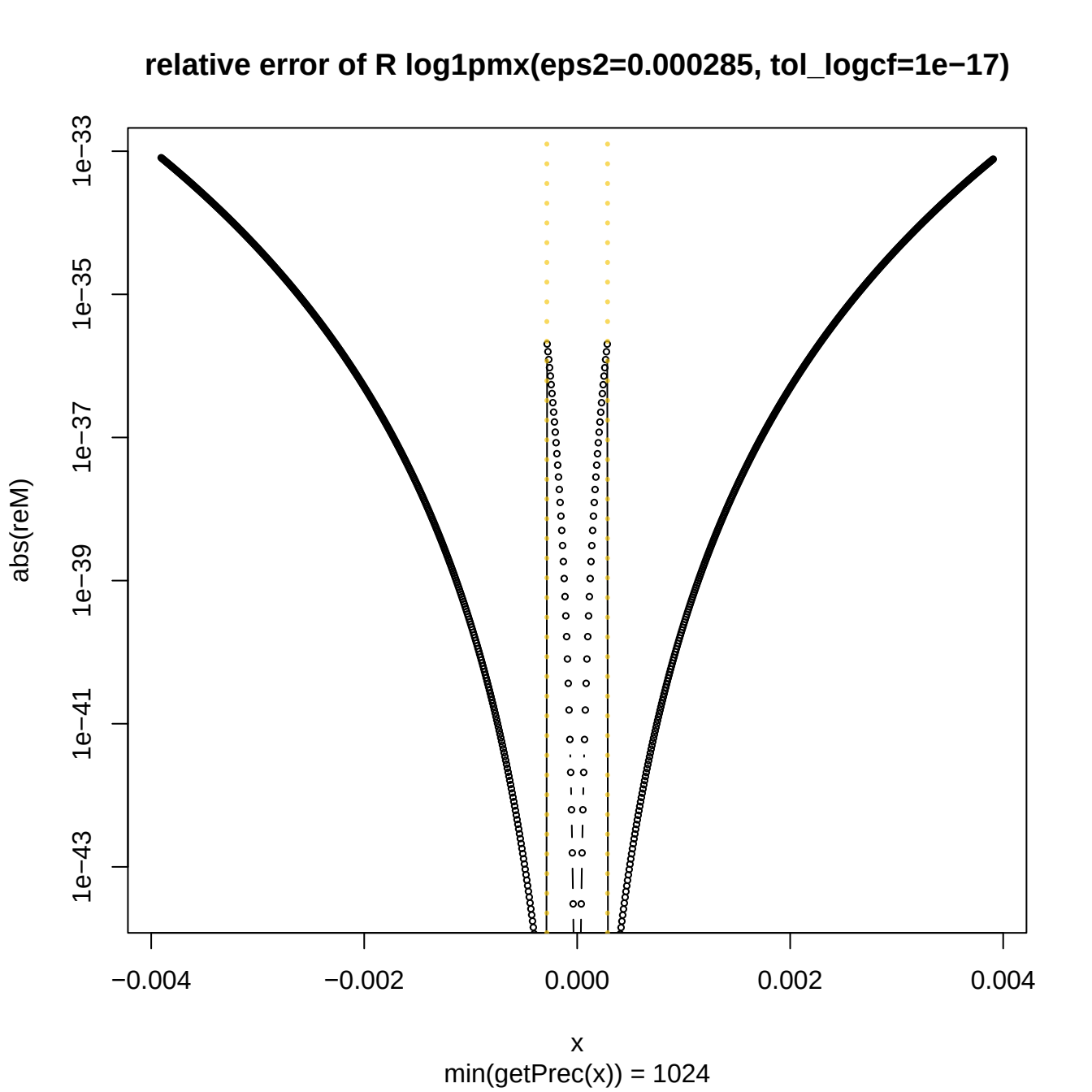

| relErr(log1pmx(<small x>)) | {via 'Rmpfr'}
abs(reS)
5.0e−17
1.0e−16
1.5e−16
2.0e−16
−0.06
−0.04
−0.02
0.00
0.02
0.04
0.06
xS

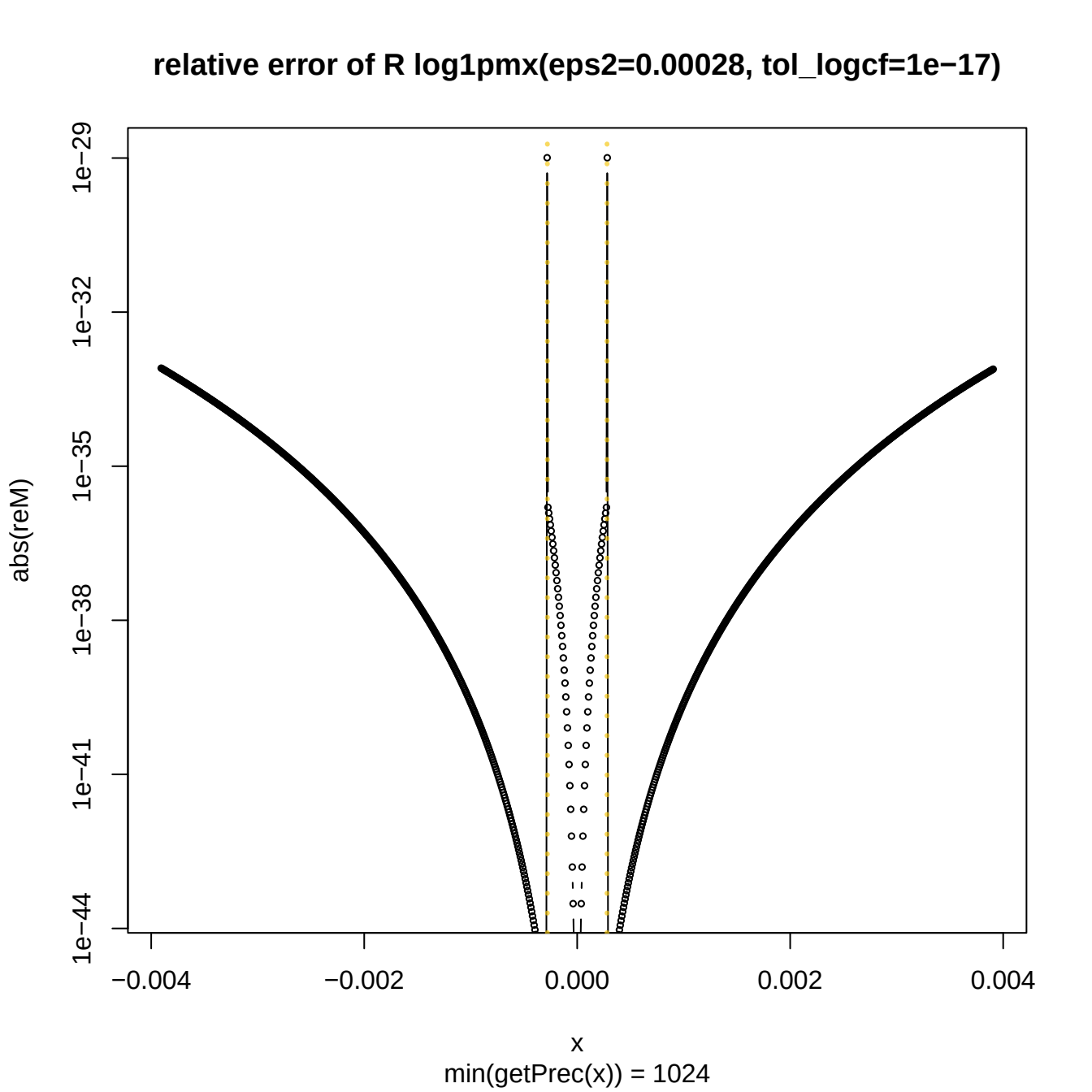

relative error of R log1pmx(eps2=0.01, tol_logcf=1e−17)
abs(reM)
1e−22
1e−24
1e−26
1e−28
1e−30
−0.06
−0.04
−0.02
0.00
0.02
0.04
0.06
x
min(getPrec(x)) = 1024

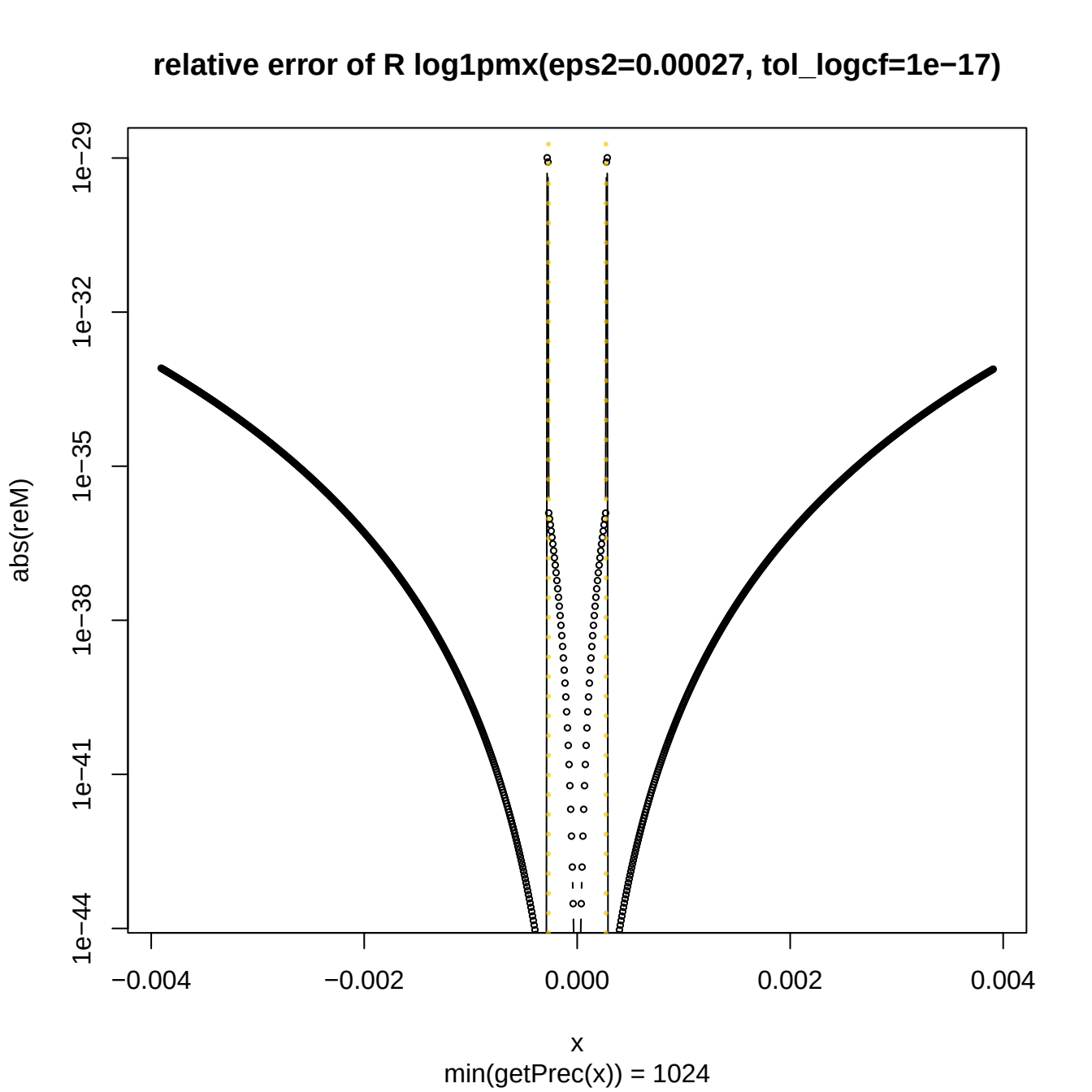

relative error of R log1pmx(eps2=0.001, tol_logcf=1e−17)
abs(reM)
1e−24
1e−26
1e−28
1e−30
1e−32
1e−34
−0.06
−0.04
−0.02
0.00
0.02
0.04
0.06
x
min(getPrec(x)) = 1024

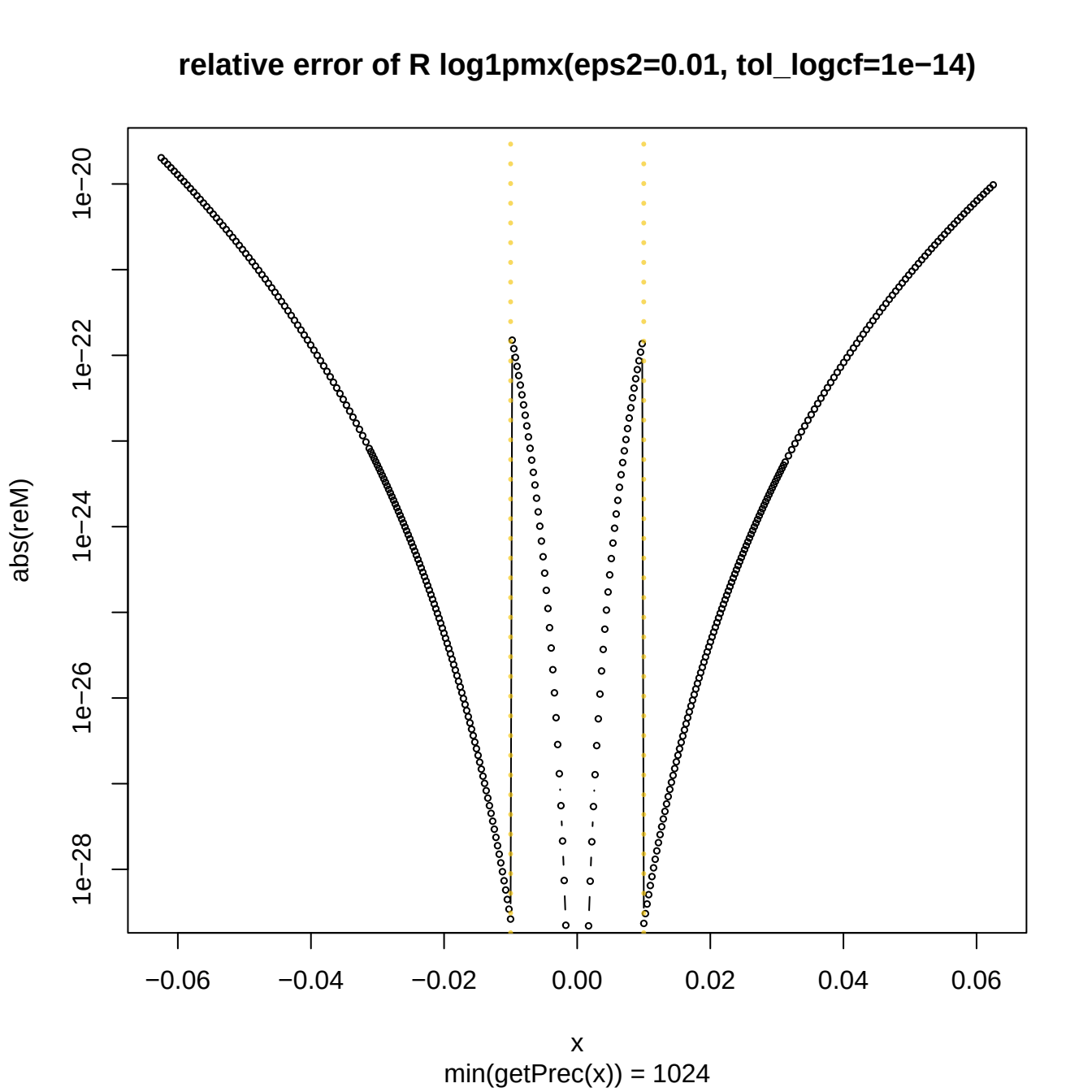

relative error of R log1pmx(eps2=0.0003, tol_logcf=1e−17)
abs(reM)
1e−33
1e−35
1e−37
1e−39
1e−41
1e−43
−0.004
−0.002
0.000
0.002
0.004
x
min(getPrec(x)) = 1024

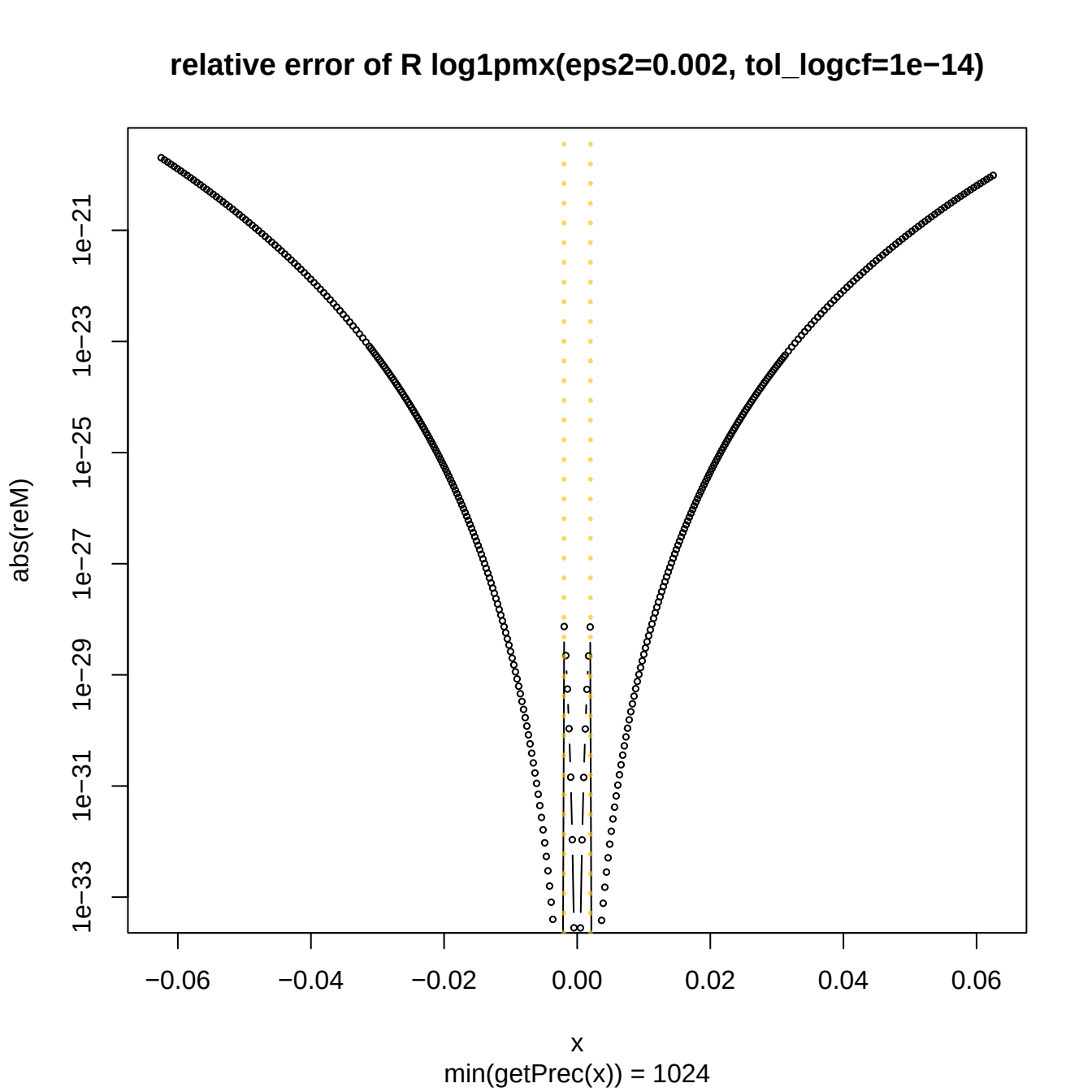

relative error of R log1pmx(eps2=0.00029, tol_logcf=1e−17)
abs(reM)
1e−33
1e−35
1e−37
1e−39
1e−41
1e−43
−0.004
−0.002
0.000
0.002
0.004
x
min(getPrec(x)) = 1024

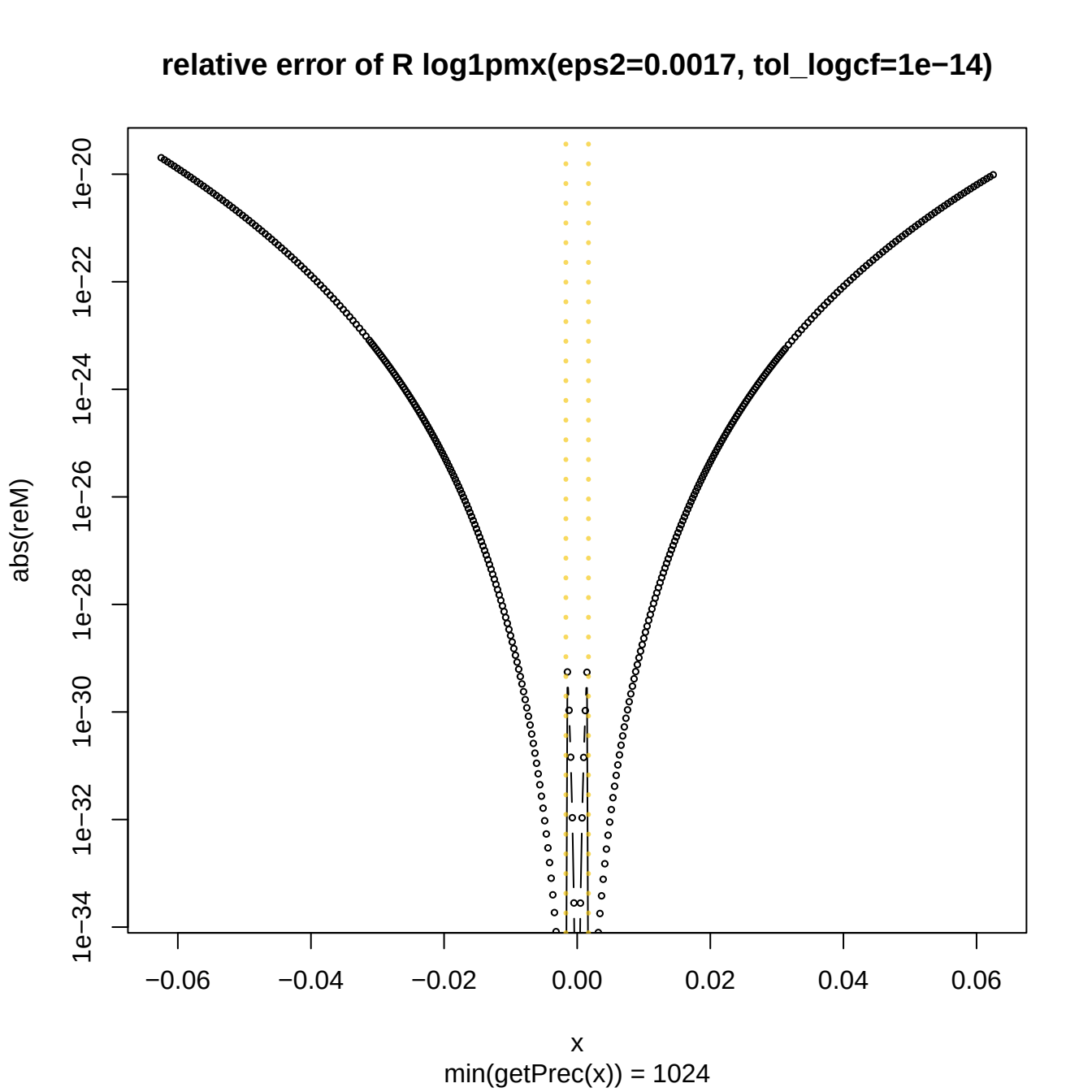

relative error of R log1pmx(eps2=0.000285, tol_logcf=1e−17)
abs(reM)
1e−33
1e−35
1e−37
1e−39
1e−41
1e−43
−0.004
−0.002
0.000
0.002
0.004
x
min(getPrec(x)) = 1024

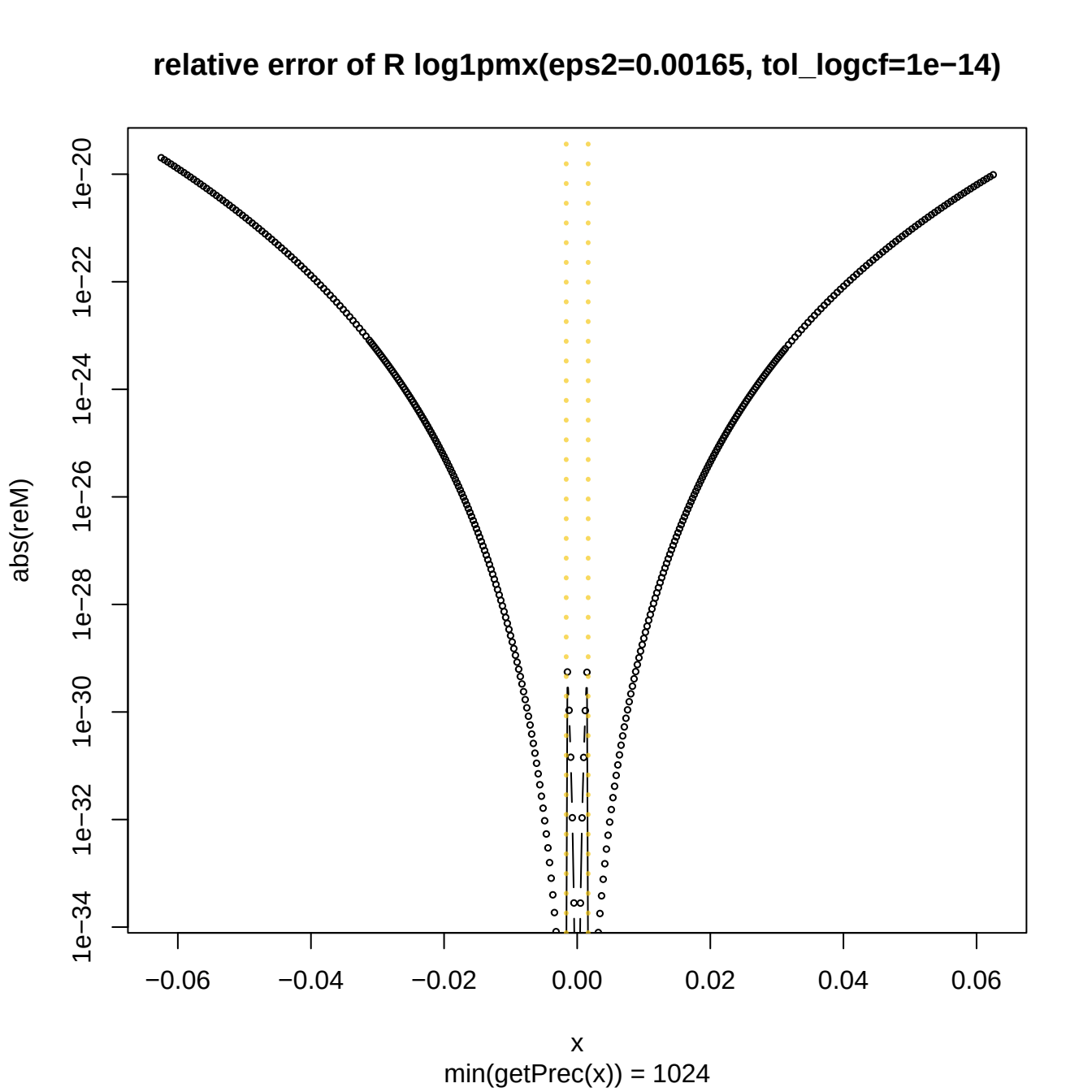

relative error of R log1pmx(eps2=0.00028, tol_logcf=1e−17)
abs(reM)
1e−29
1e−32
1e−35
1e−38
1e−41
1e−44
−0.004
−0.002
0.000
0.002
0.004
x
min(getPrec(x)) = 1024

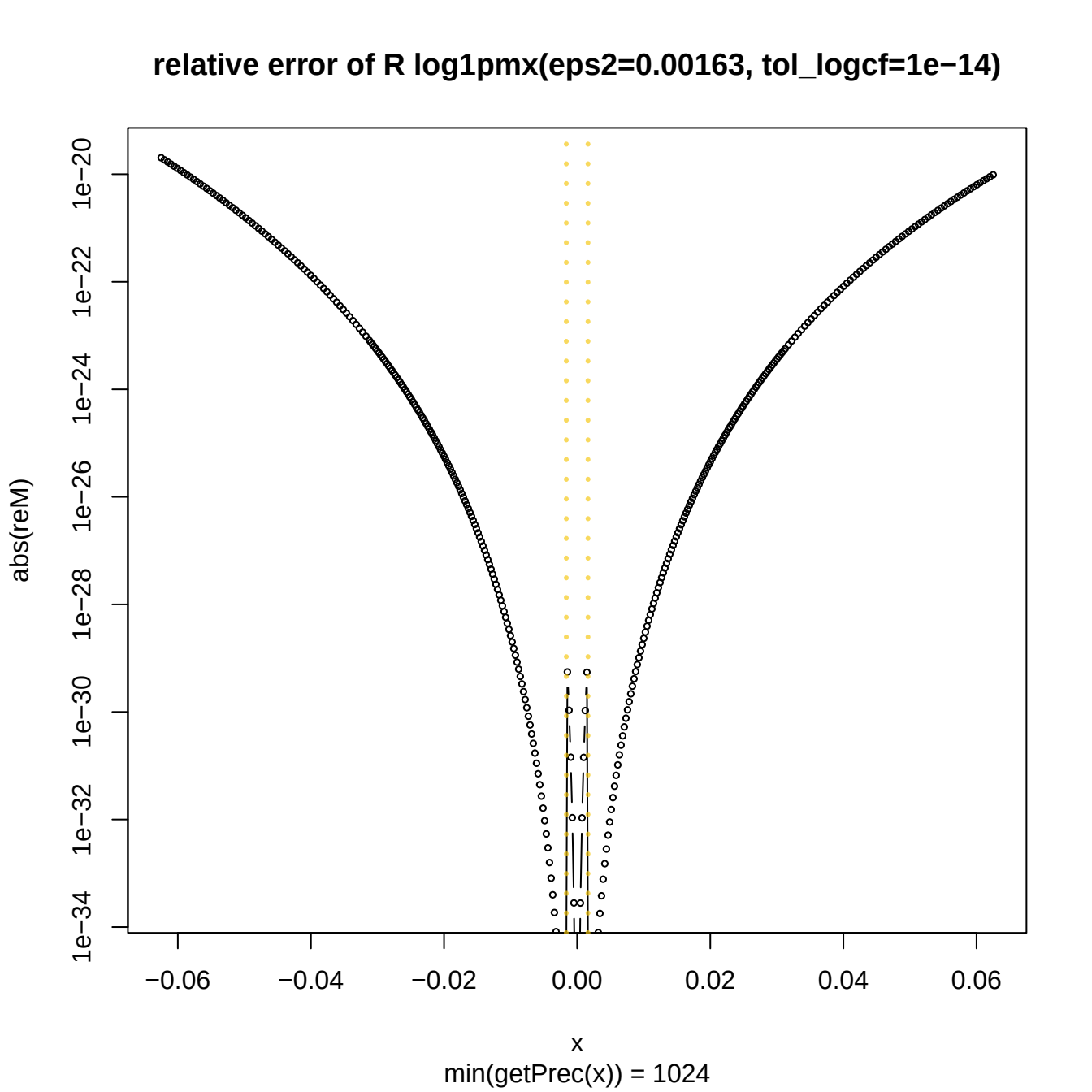

relative error of R log1pmx(eps2=0.00027, tol_logcf=1e−17)
abs(reM)
1e−29
1e−32
1e−35
1e−38
1e−41
1e−44
−0.004
−0.002
0.000
0.002
0.004
x
min(getPrec(x)) = 1024

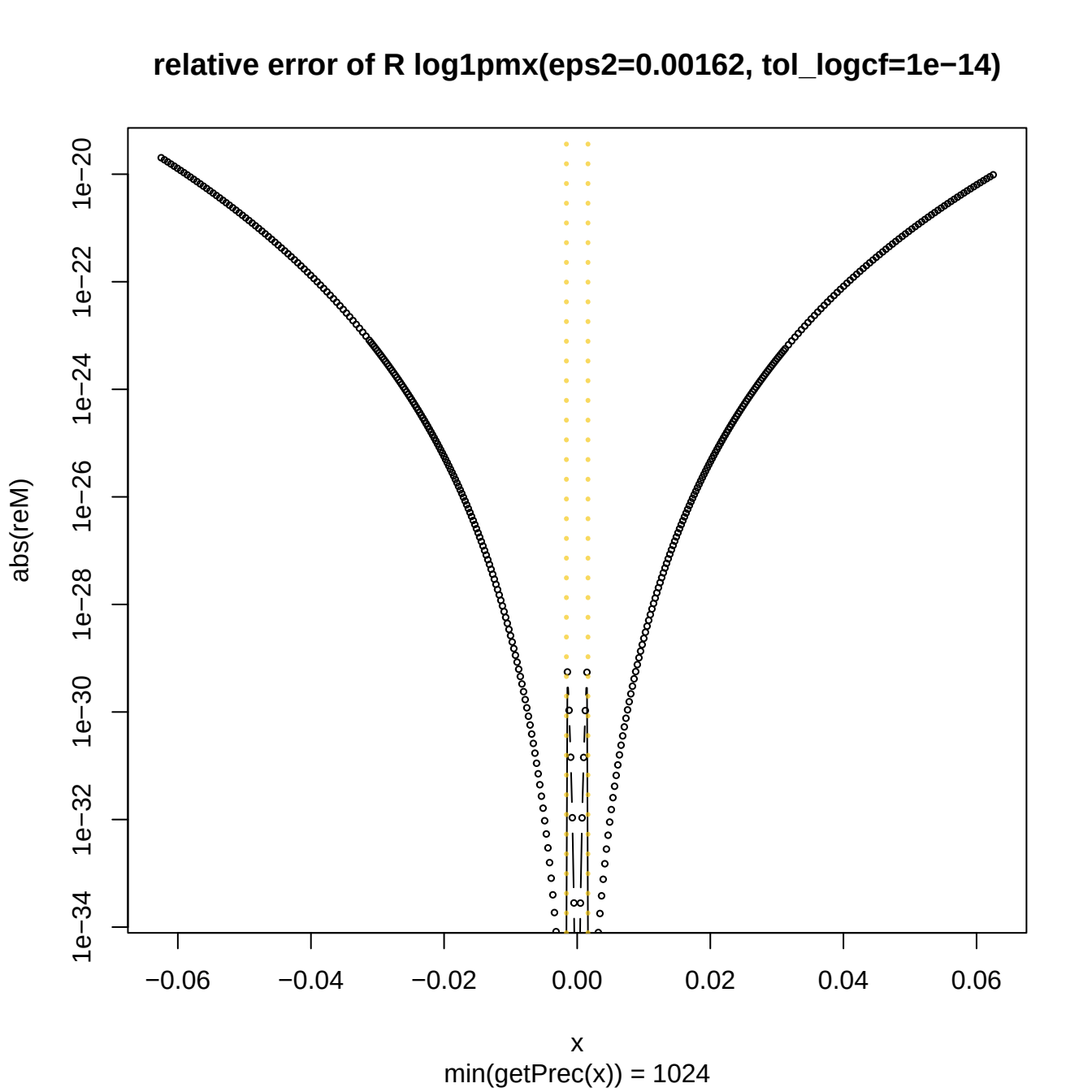

relative error of R log1pmx(eps2=0.01, tol_logcf=1e−14)
abs(reM)
1e−20
1e−22
1e−24
1e−26
1e−28
−0.06
−0.04
−0.02
0.00
0.02
0.04
0.06
x
min(getPrec(x)) = 1024

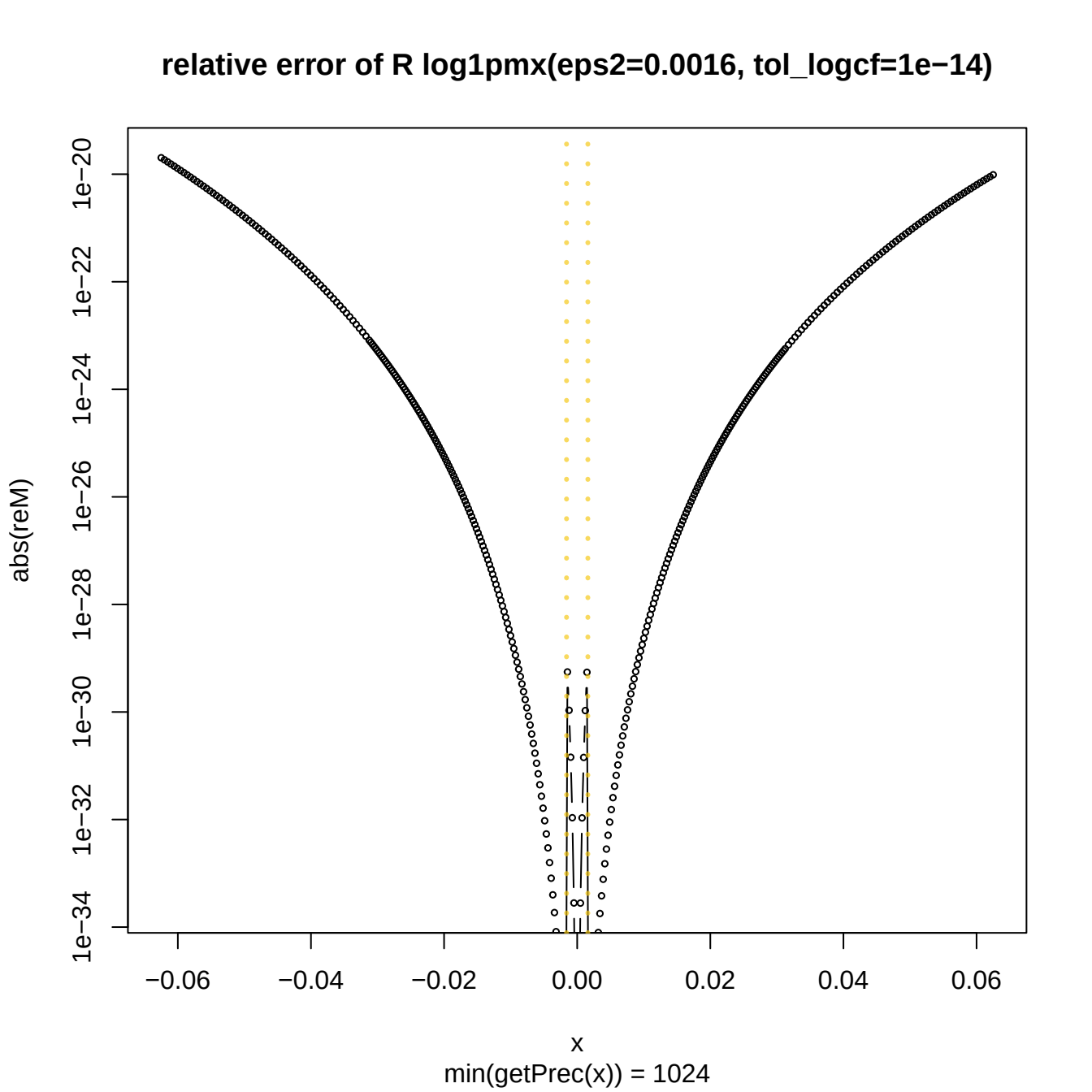

relative error of R log1pmx(eps2=0.002, tol_logcf=1e−14)
abs(reM)
1e−21
1e−23
1e−25
1e−27
1e−29
1e−31
1e−33
−0.06
−0.04
−0.02
0.00
0.02
0.04
0.06
x
min(getPrec(x)) = 1024


relative error of R log1pmx(eps2=0.0017, tol_logcf=1e−14)
abs(reM)
1e−20
1e−22
1e−24
1e−26
1e−28
1e−30
1e−32
1e−34
−0.06
−0.04
−0.02
0.00
0.02
0.04
0.06
x
min(getPrec(x)) = 1024


relative error of R log1pmx(eps2=0.00165, tol_logcf=1e−14)
abs(reM)
1e−20
1e−22
1e−24
1e−26
1e−28
1e−30
1e−32
1e−34
−0.06
−0.04
−0.02
0.00
0.02
0.04
0.06
x
min(getPrec(x)) = 1024


relative error of R log1pmx(eps2=0.00163, tol_logcf=1e−14)
abs(reM)
1e−20
1e−22
1e−24
1e−26
1e−28
1e−30
1e−32
1e−34
−0.06
−0.04
−0.02
0.00
0.02
0.04
0.06
x
min(getPrec(x)) = 1024


relative error of R log1pmx(eps2=0.00162, tol_logcf=1e−14)
abs(reM)
1e−20
1e−22
1e−24
1e−26
1e−28
1e−30
1e−32
1e−34
−0.06
−0.04
−0.02
0.00
0.02
0.04
0.06
x
min(getPrec(x)) = 1024


relative error of R log1pmx(eps2=0.0016, tol_logcf=1e−14)
abs(reM)
1e−20
1e−22
1e−24
1e−26
1e−28
1e−30
1e−32
1e−34
−0.06
−0.04
−0.02
0.00
0.02
0.04
0.06
x
min(getPrec(x)) = 1024