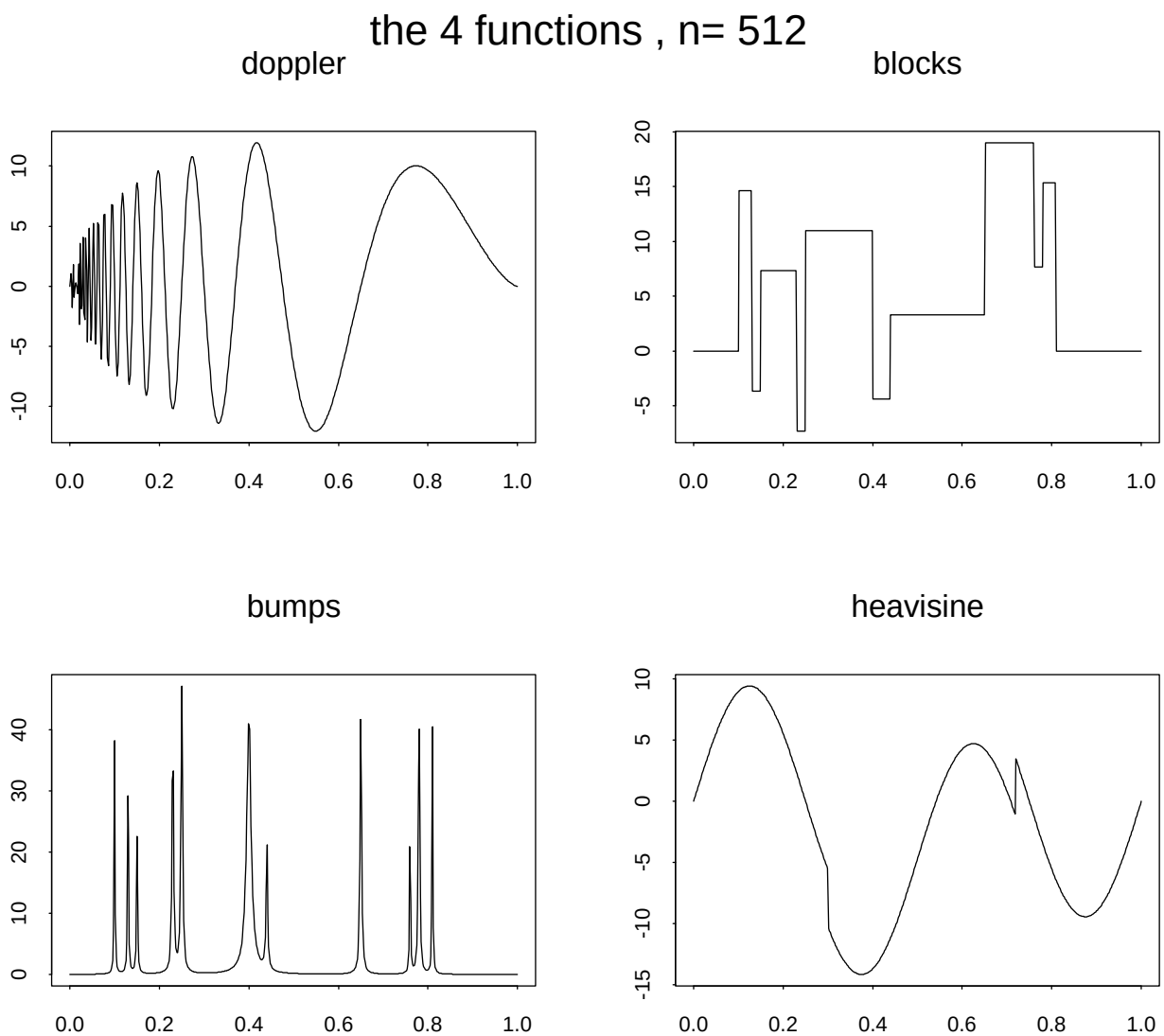
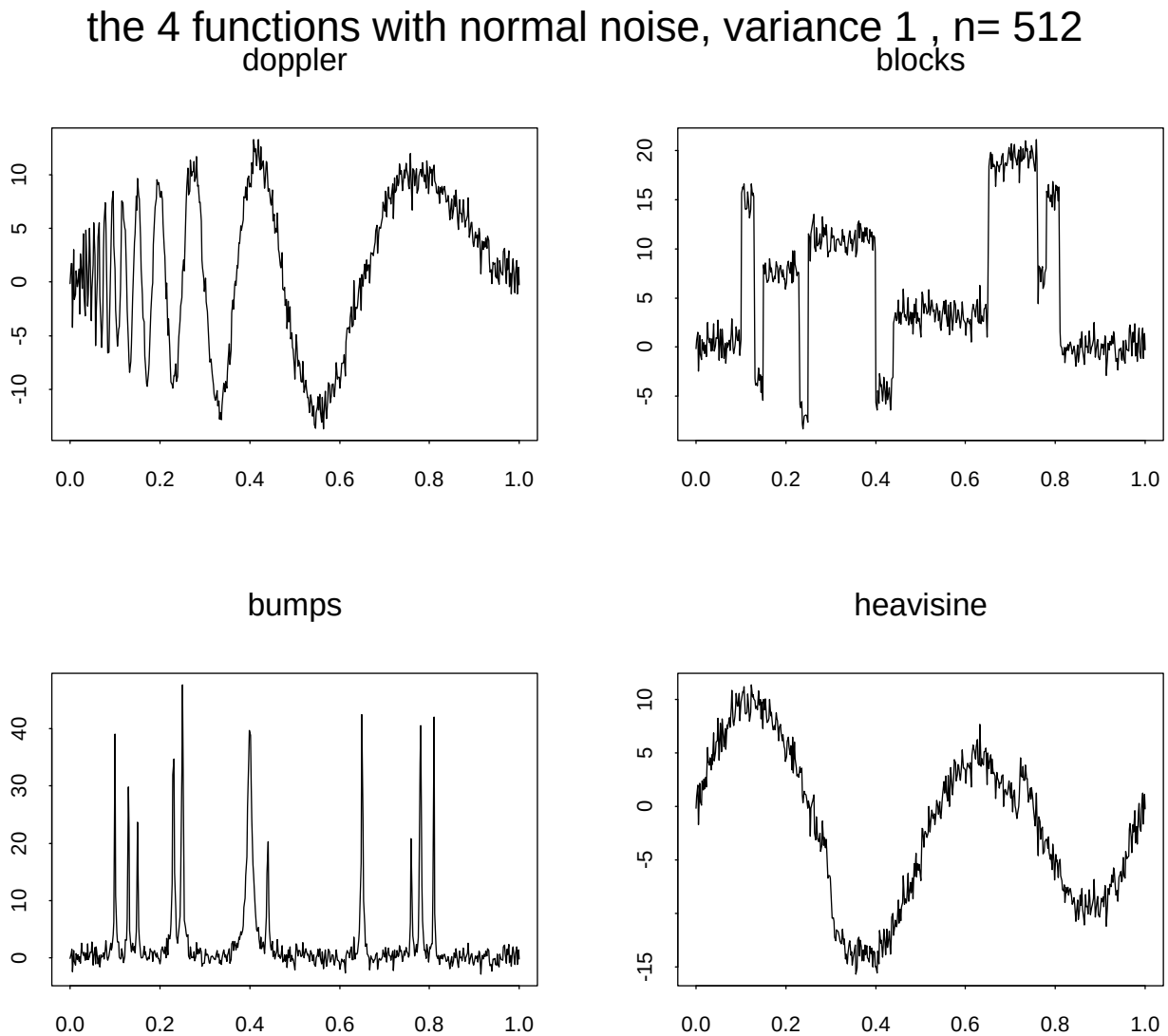
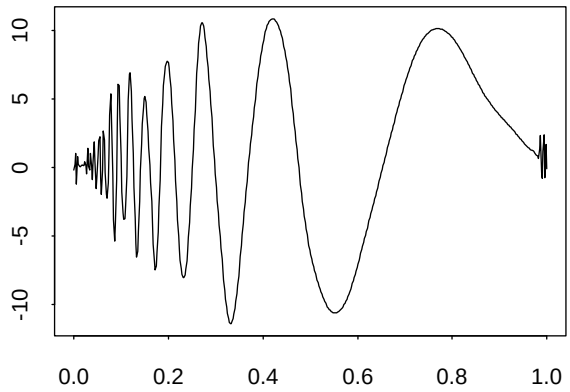

the 4 functions , n= 512
doppler
blocks
bumps
heavisine
-10
-5
0
5
10
-5
0
5
10
15
20
0
10
20
30
40
-15
-10
-5
0
5
10
0.0
0.2
0.4
0.6
0.8
1.0

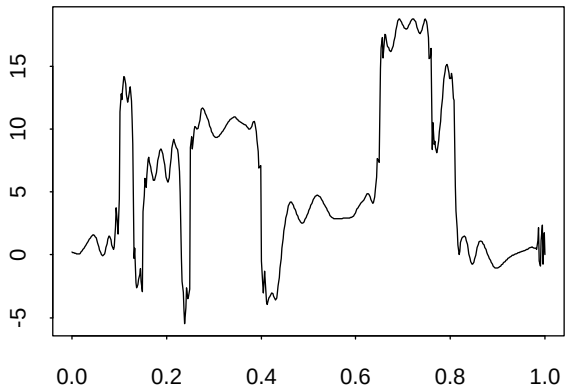

the 4 functions with normal noise, variance 1 , n= 512
doppler
blocks
bumps
heavisine
-10
-5
0
5
10
-5
0
5
10
15
20
0
10
20
30
40
-15
-5
0
5
10
0.0
0.2
0.4
0.6
0.8
1.0

normal noise variance 1, thresholds sqrt(2 log n) , n= 512

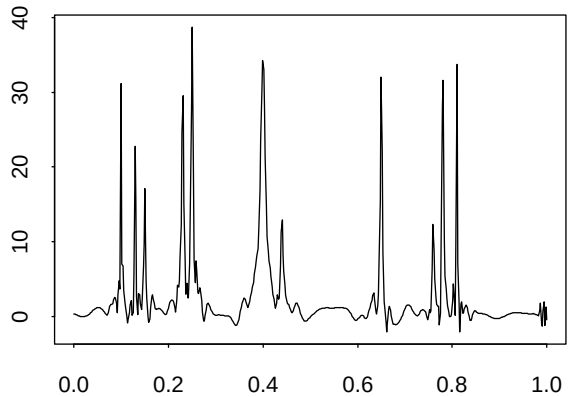
doppler loss/n= 1.28



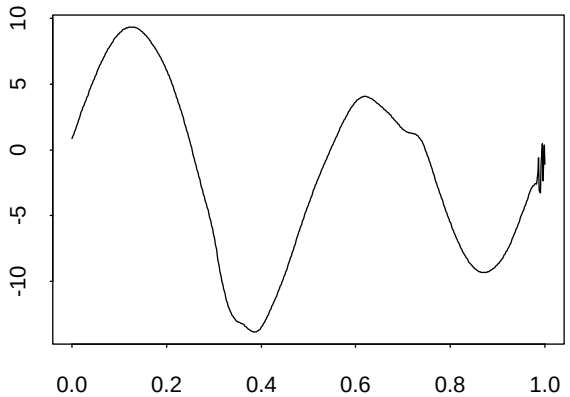
blocks loss/n= 2.34



bumps loss/n= 2.98

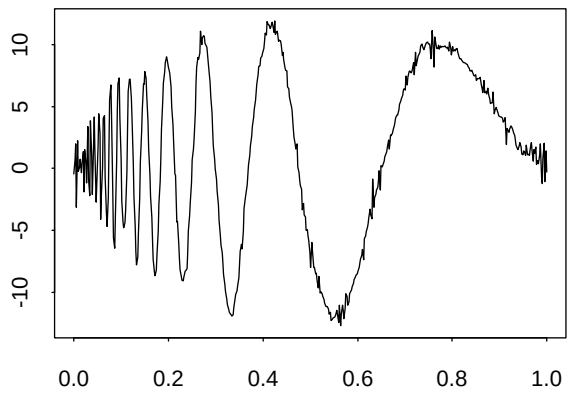


heavisine loss/n= 0.464

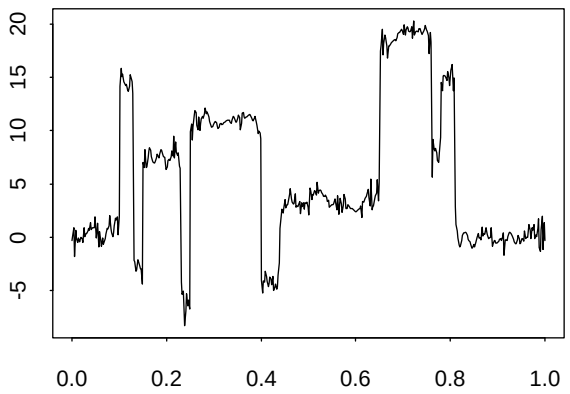


normal noise variance 1, sure shrink , n= 512

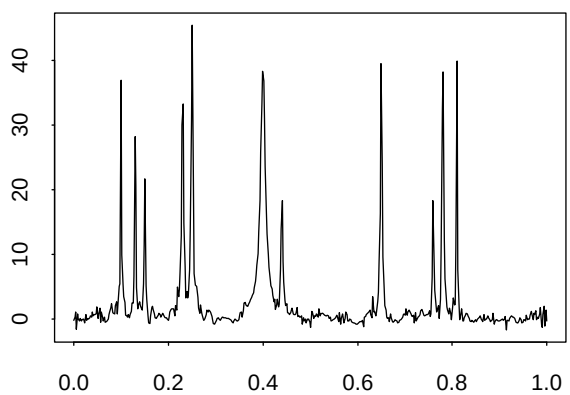
doppler loss/n= 0.429



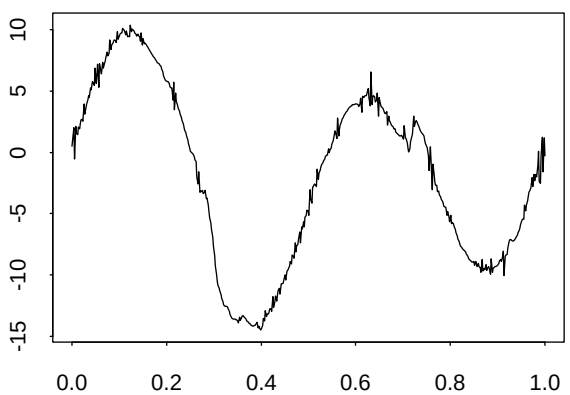
blocks loss/n= 0.601



bumps loss/n= 0.769

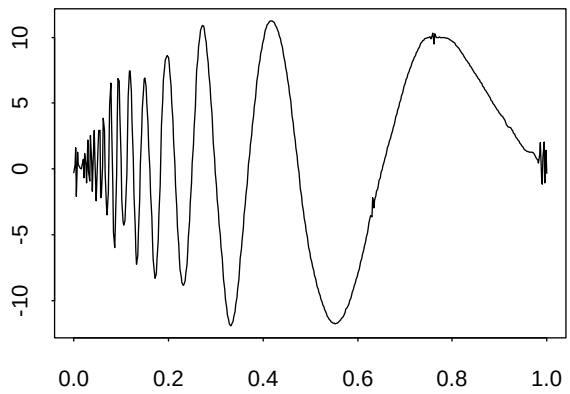


heavisine loss/n= 0.296

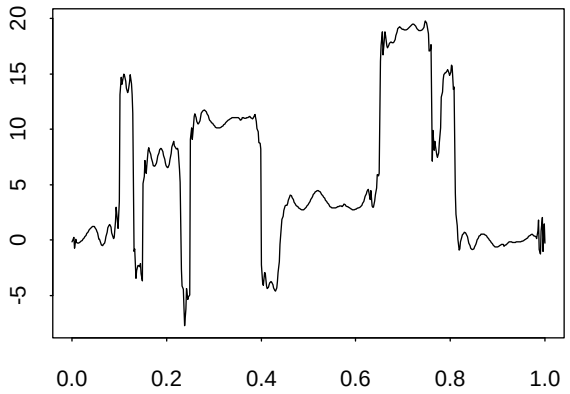


normal noise variance 1, coefficient dependent thresholds , n= 512

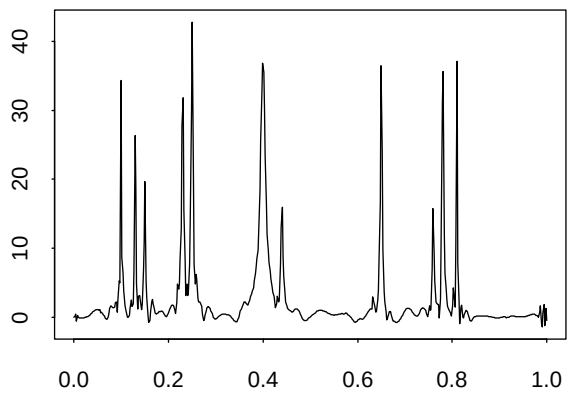
doppler loss/n= 0.521



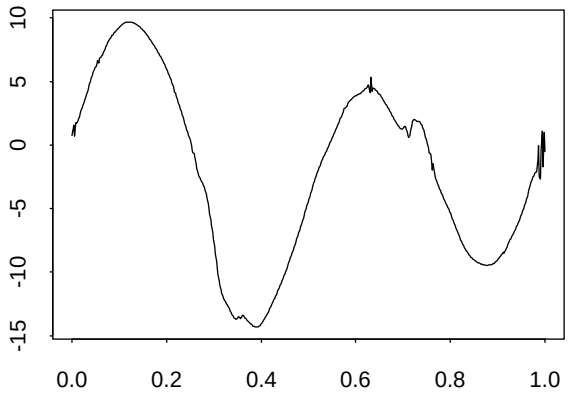
blocks loss/n= 0.902



bumps loss/n= 1.25

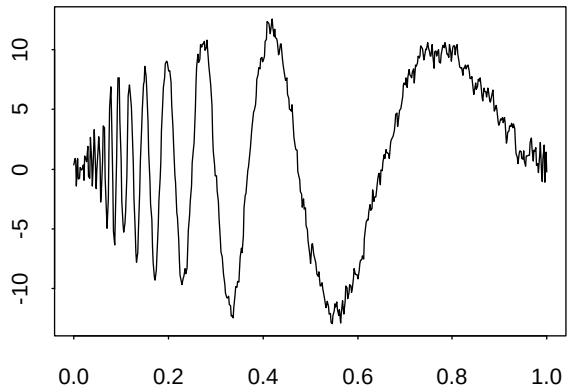


heavisine loss/n= 0.204

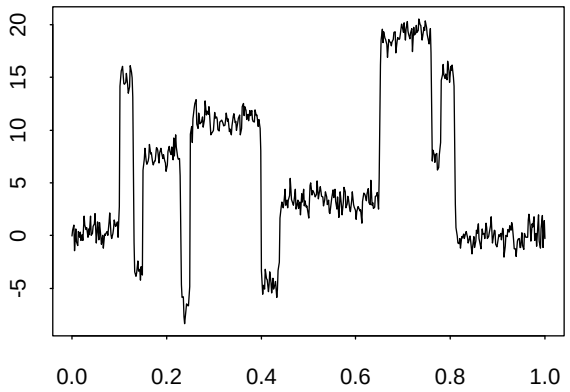


normal noise variance 1, denoised with James-Stein , n= 512

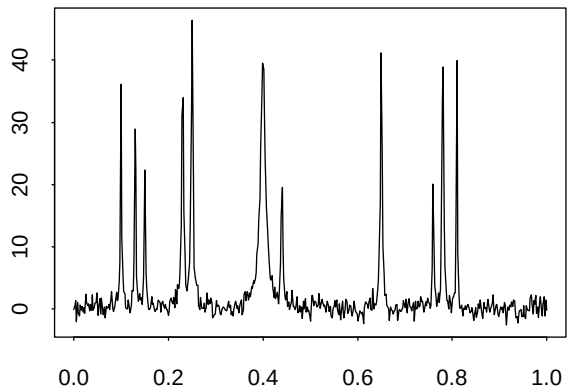
doppler loss/n= 0.663



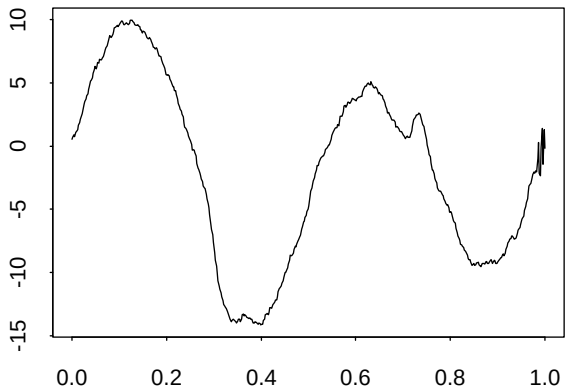
blocks loss/n= 0.816



bumps loss/n= 1.03

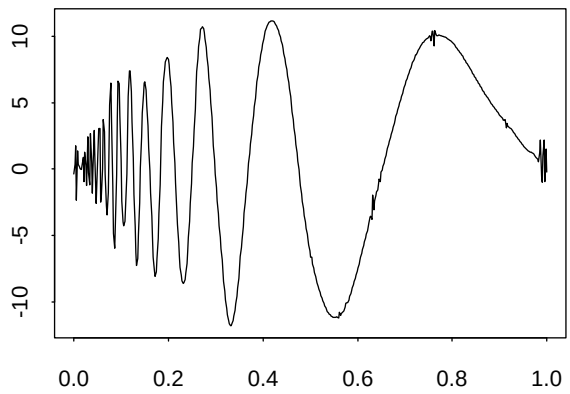


heavisine loss/n= 0.25

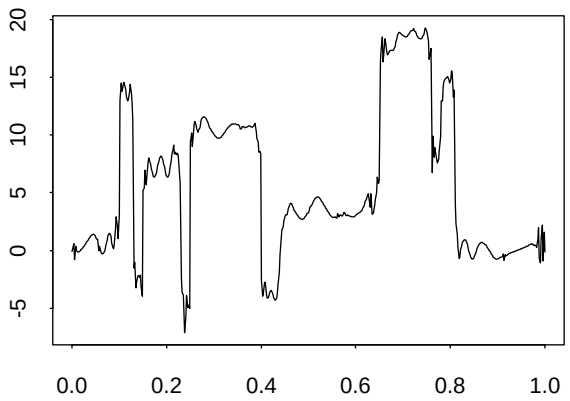


normal noise variance 1, threshold optimal gaussian , n= 512

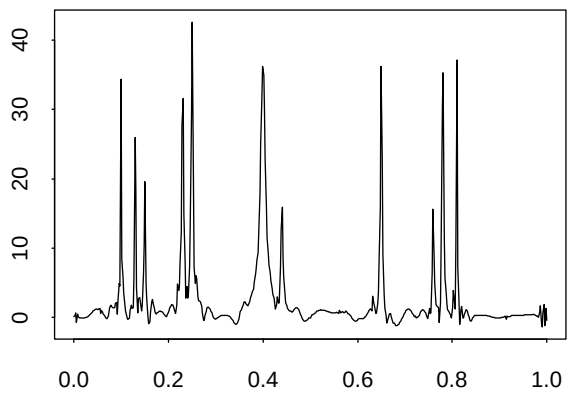
doppler loss/n= 0.64



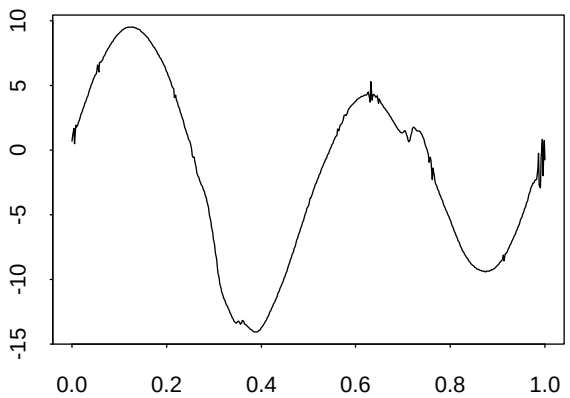
blocks loss/n= 1.09



bumps loss/n= 1.41

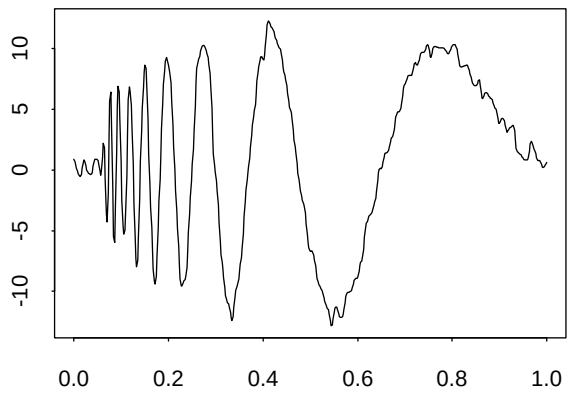


heavisine loss/n= 0.27

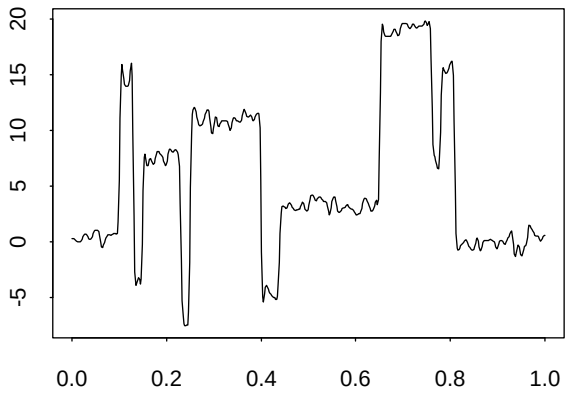


normal noise variance 1, median filter , n= 512

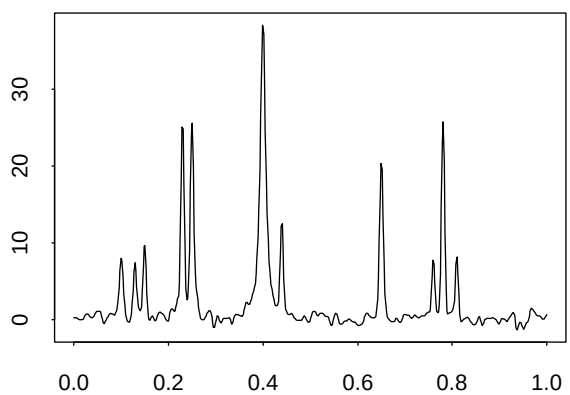
doppler loss/n= 0.815



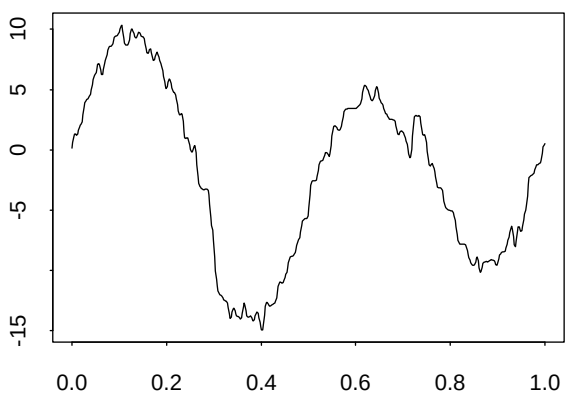
blocks loss/n= 1.11



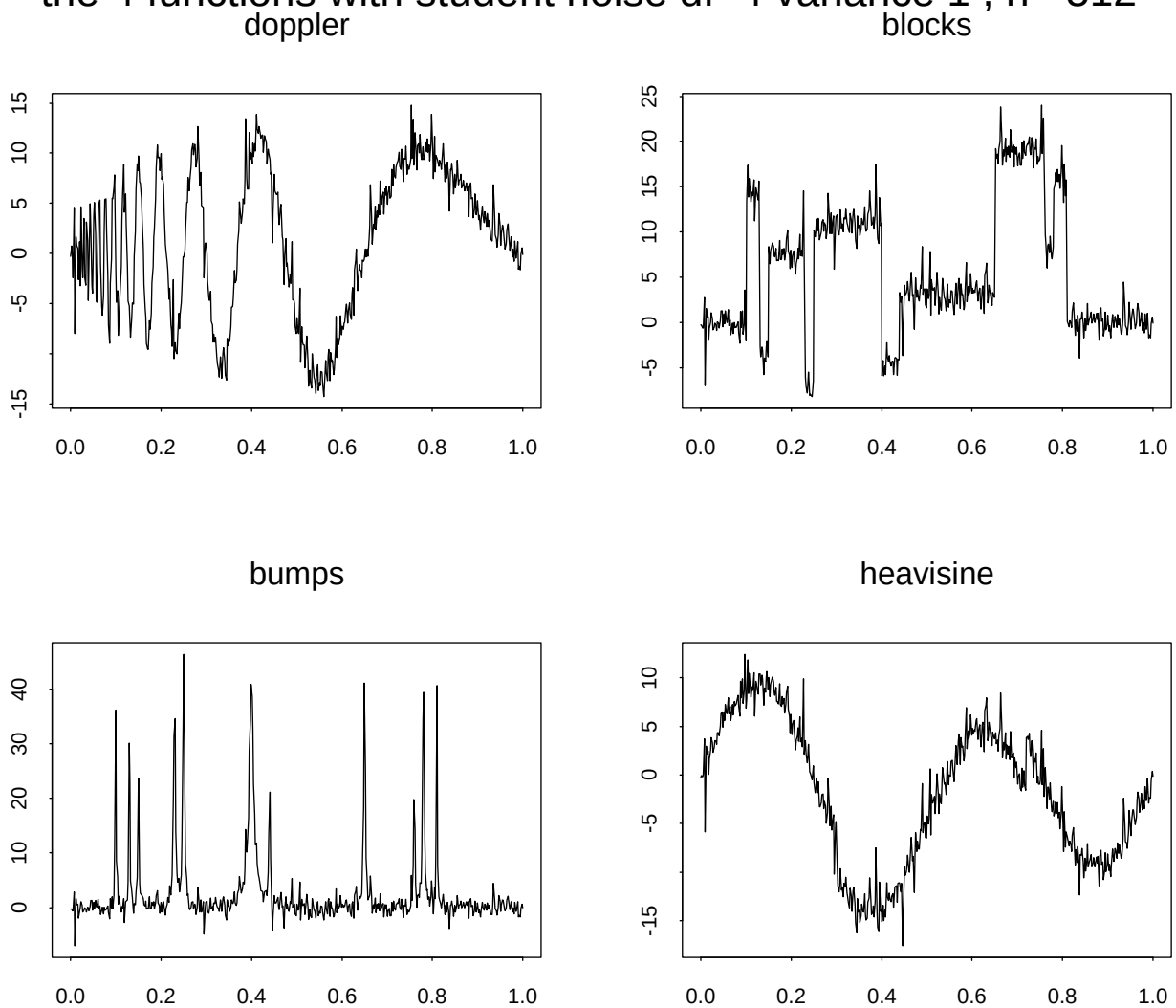
bumps loss/n= 9.9



heavisine loss/n= 0.328

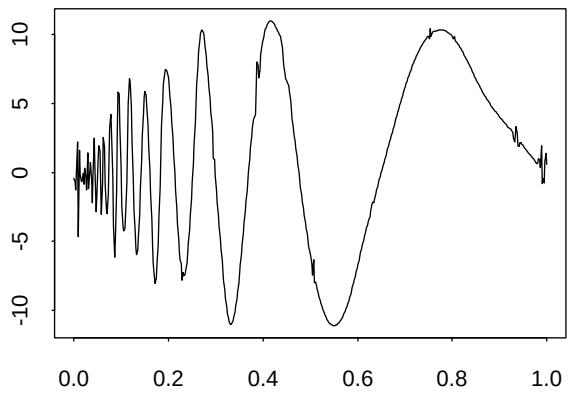


the 4 functions with student noise df=4 variance 1 , n= 512

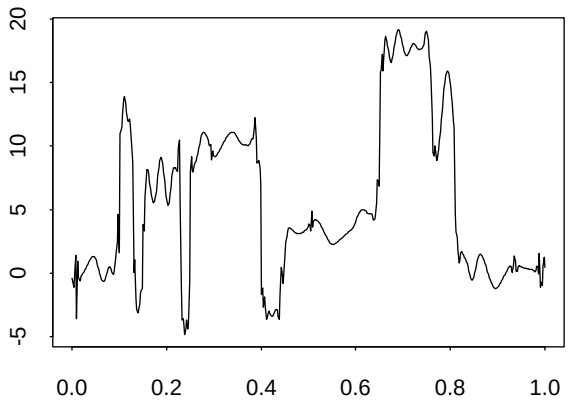


student noise df=4 variance 1, thresholds sqrt(2 log n) , n= 512

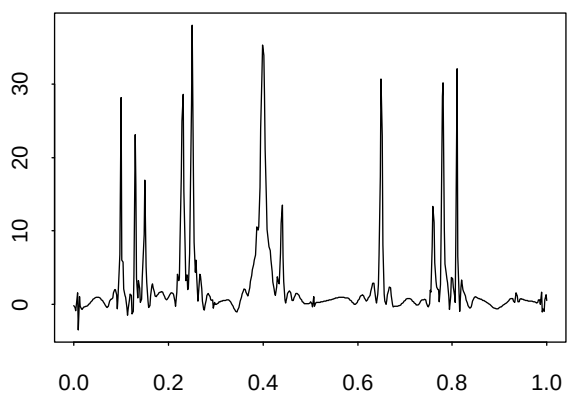
doppler loss/n= 1.13



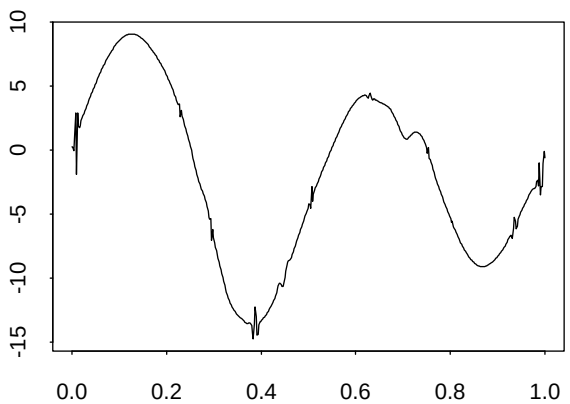
blocks loss/n= 2.51



bumps loss/n= 3.07

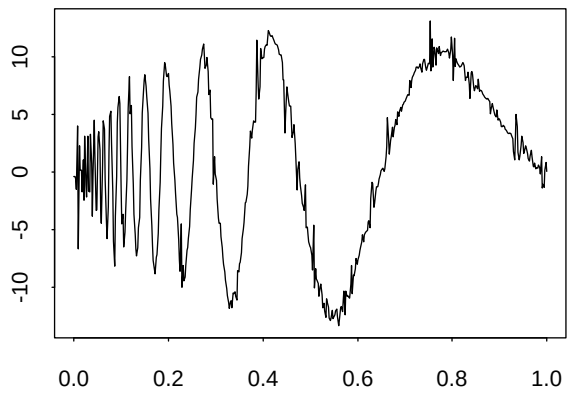


heavisine loss/n= 0.489

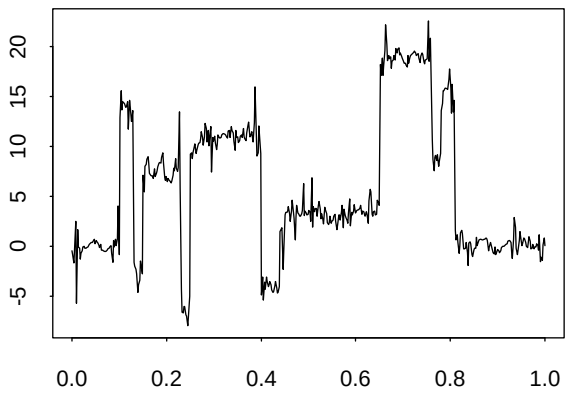


student noise df=4 variance 1, sure shrink , n= 512

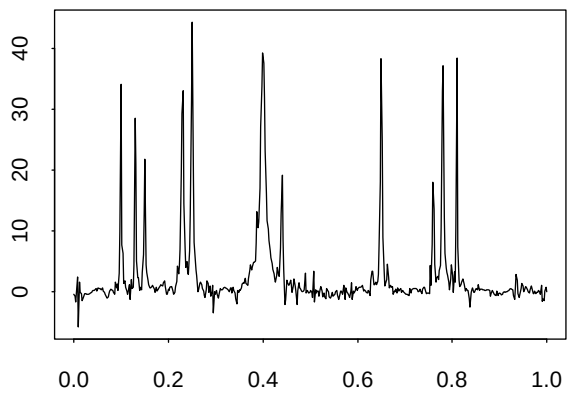
doppler loss/n= 0.844



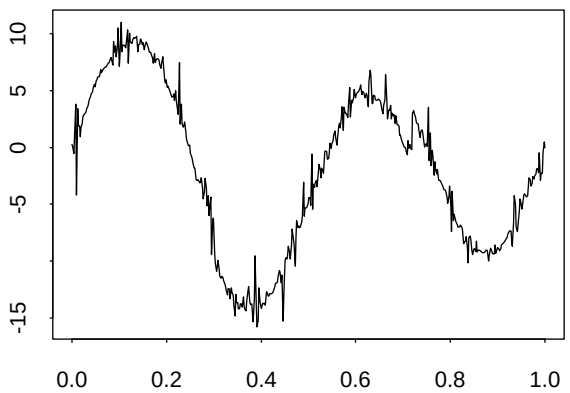
blocks loss/n= 1.14



bumps loss/n= 1.28

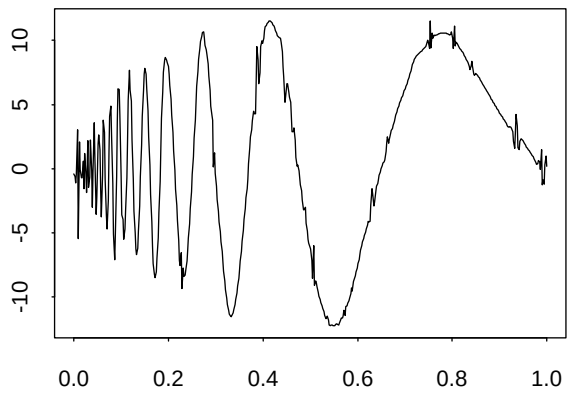


heavisine loss/n= 0.755

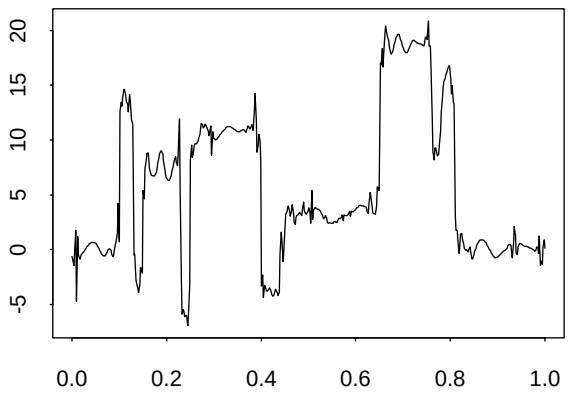


tudent noise df=4 variance 1, coefficient dependent thresholds , n= 51

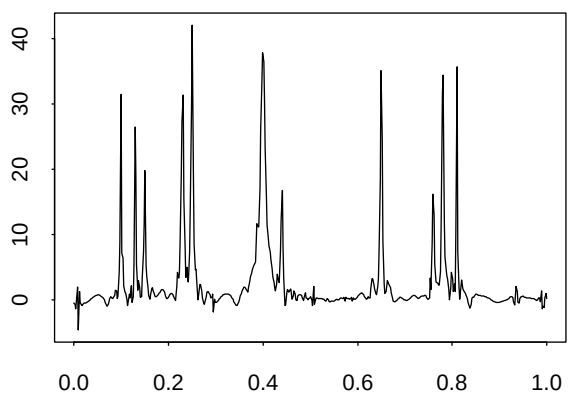
doppler loss/n= 0.605



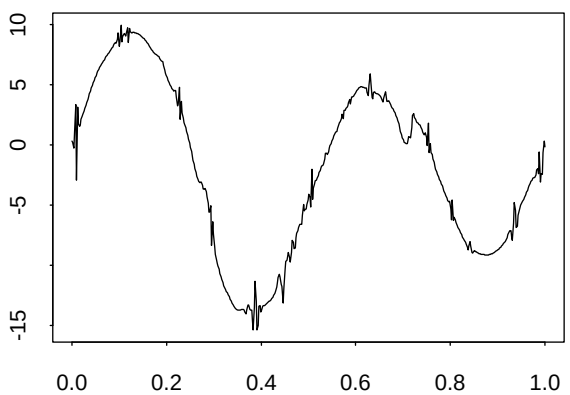
blocks loss/n= 1.19



bumps loss/n= 1.56

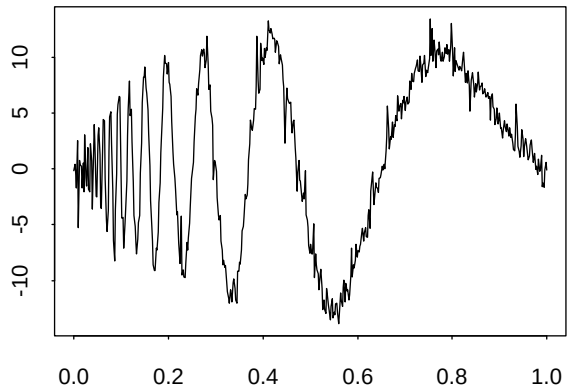


heavisine loss/n= 0.353

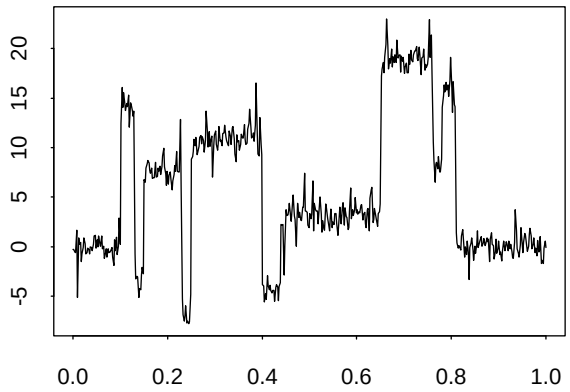


student noise df=4 variance 1, James-Stein , n= 512

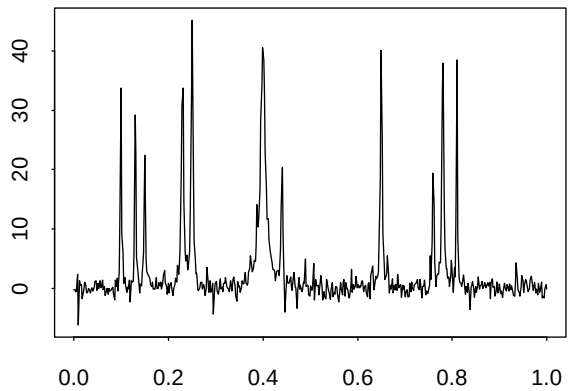
doppler loss/n= 1.16



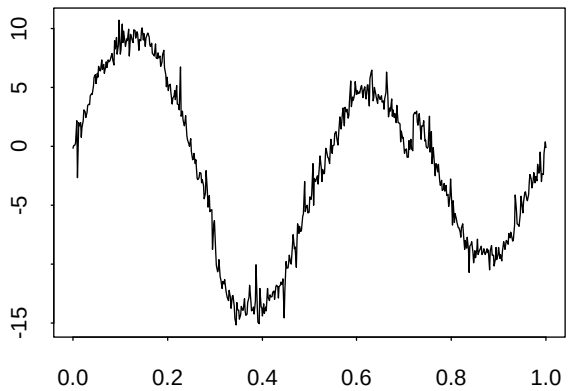
blocks loss/n= 1.4



bumps loss/n= 1.8

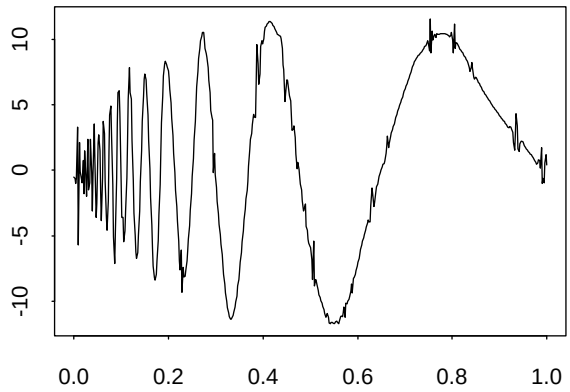


heavisine loss/n= 0.722

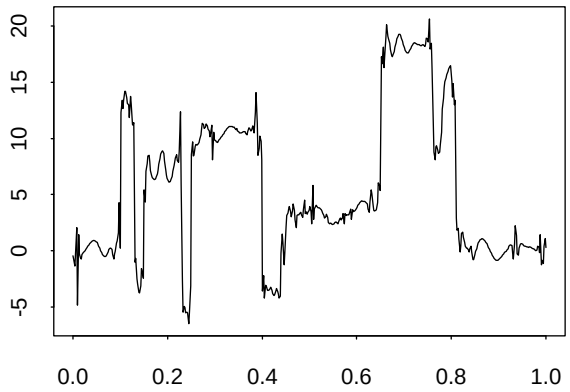


student noise df=4 variance 1, threshold optimal gaussian , n= 512

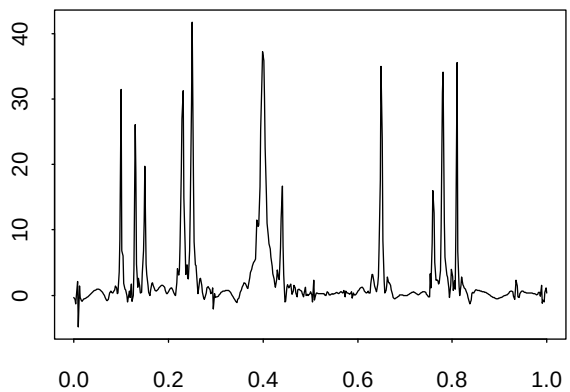
doppler loss/n= 0.701



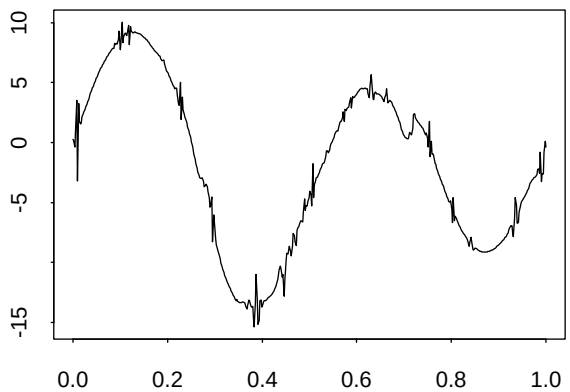
blocks loss/n= 1.39



bumps loss/n= 1.67

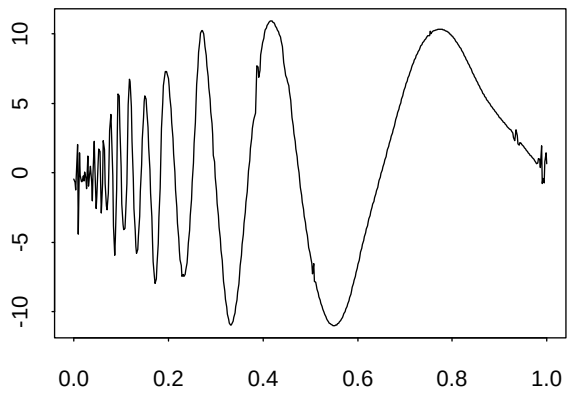


heavisine loss/n= 0.442

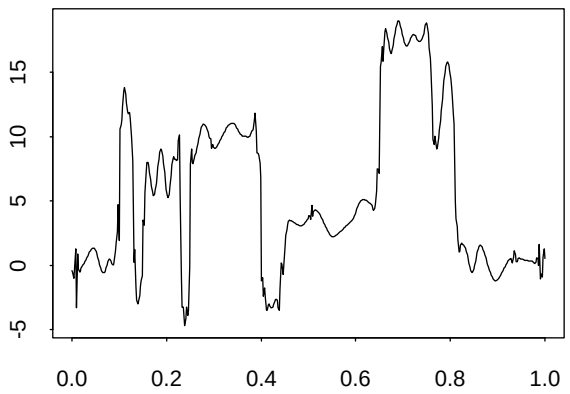


student noise df=4 variance 1, threshold optimal student , n= 512

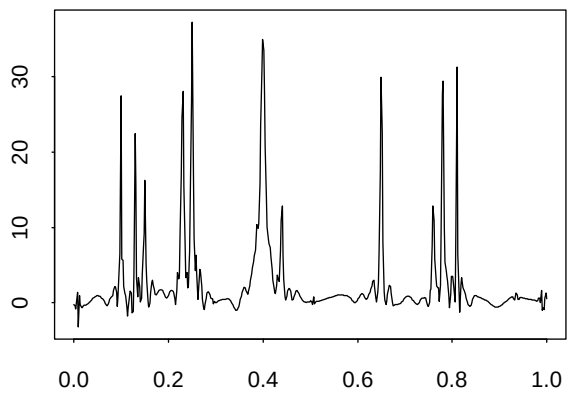
doppler loss/n= 1.27



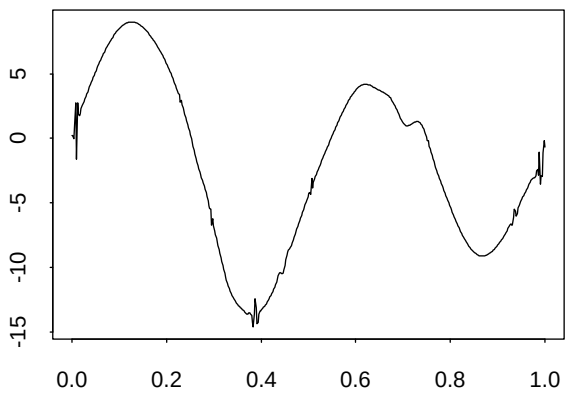
blocks loss/n= 2.81



bumps loss/n= 3.48

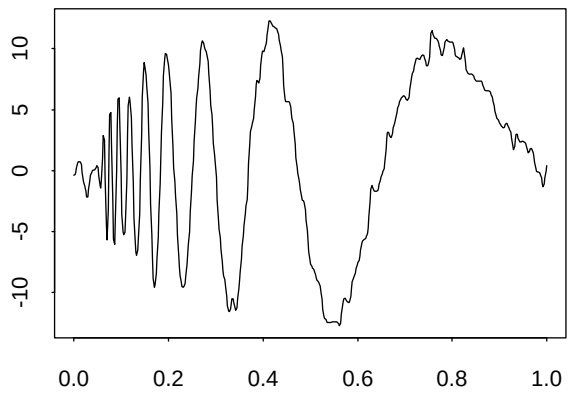


heavisine loss/n= 0.519

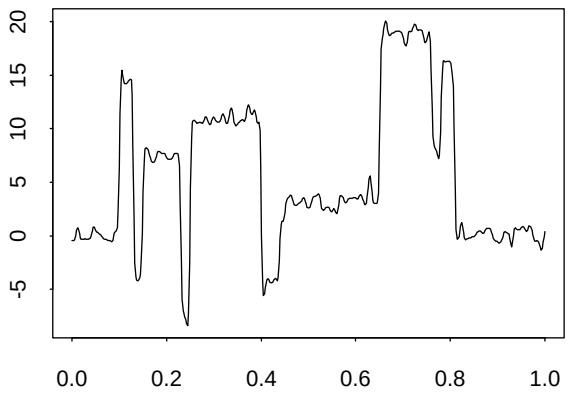


student noise df=4 variance 1, median filter , n= 512

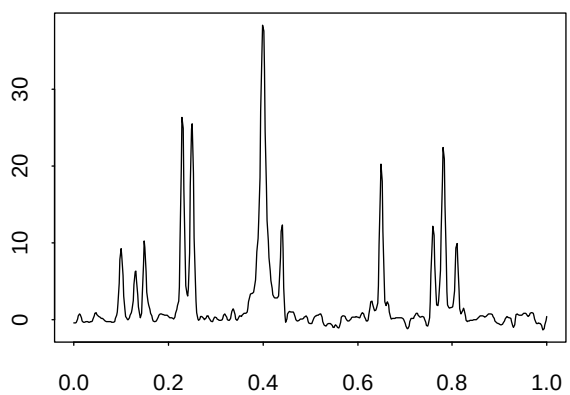
doppler loss/n= 0.941



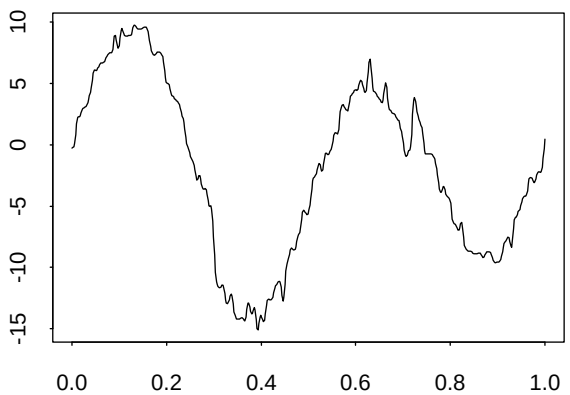
blocks loss/n= 1.22

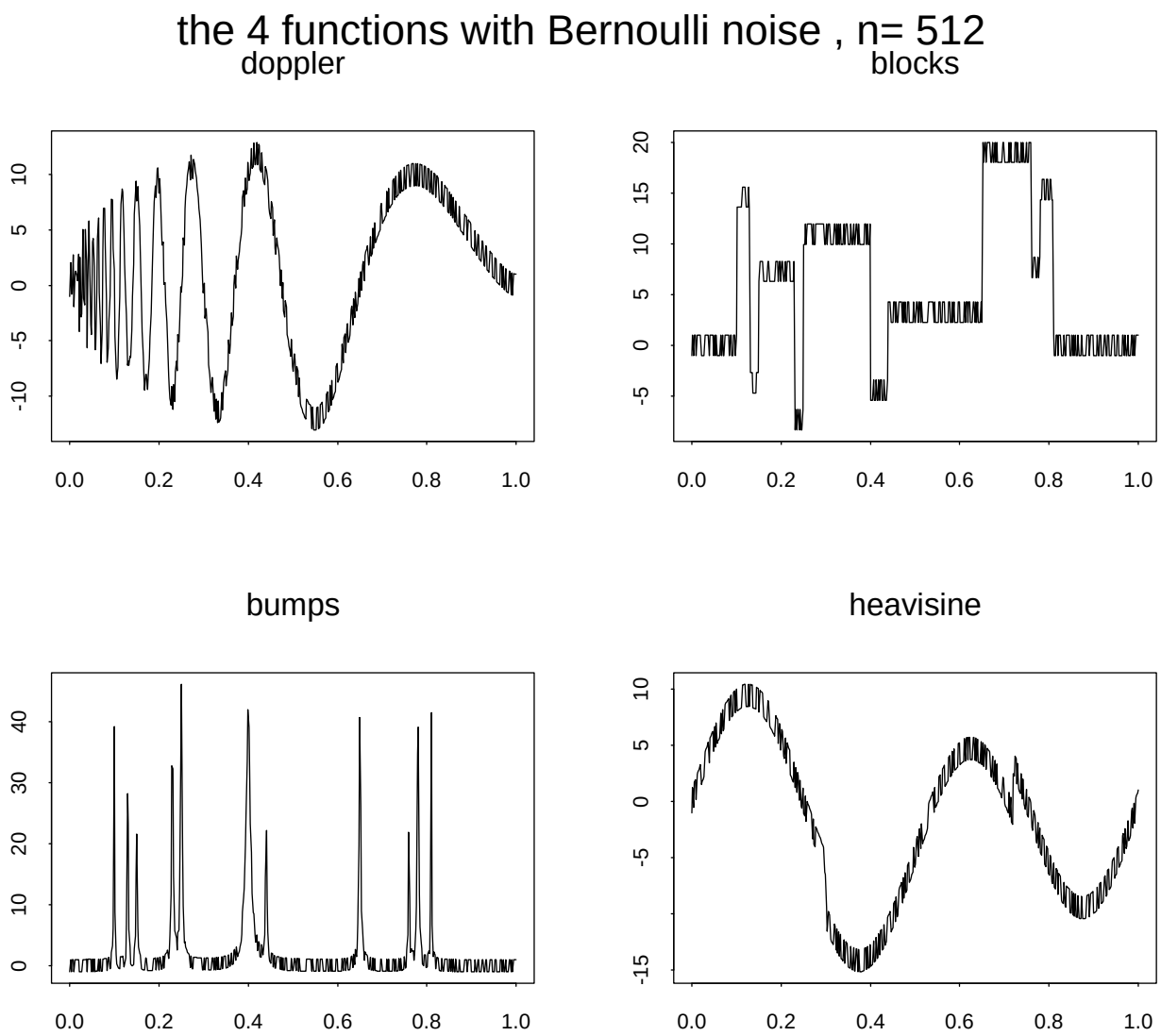


bumps loss/n= 10.2



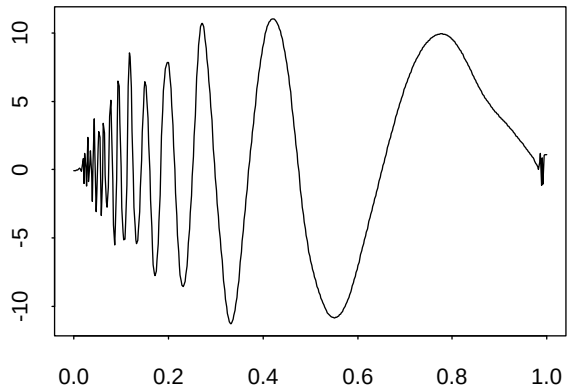
heavisine loss/n= 0.34



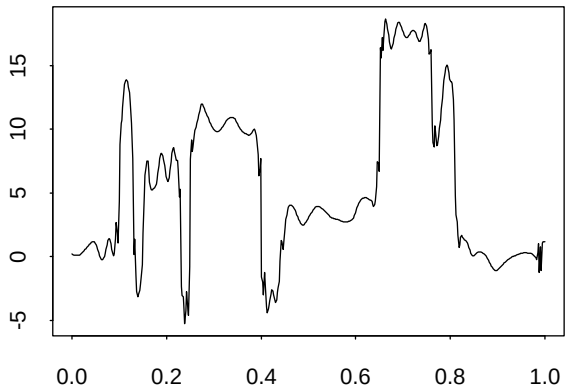

the 4 functions with Bernoulli noise , n= 512
doppler
blocks
bumps
heavisine
-10
-5
0
5
10
-5
0
5
10
15
20
0
10
20
30
40
-15
-5
0
5
10
0.0
0.2
0.4
0.6
0.8
1.0

Bernoulli noise, thresholds sqrt(2 log n) , n= 512

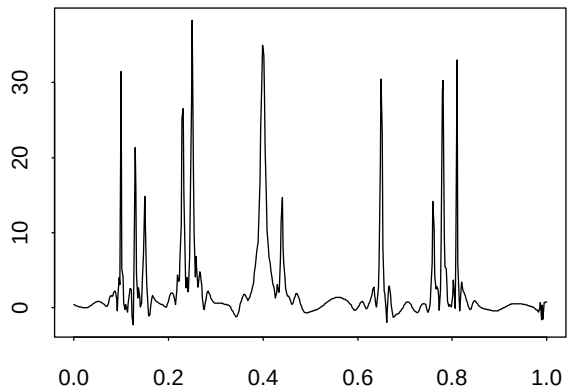
doppler loss/n= 0.871



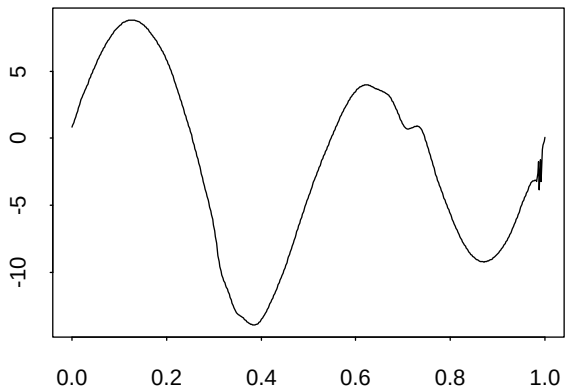
blocks loss/n= 2.47



bumps loss/n= 2.97

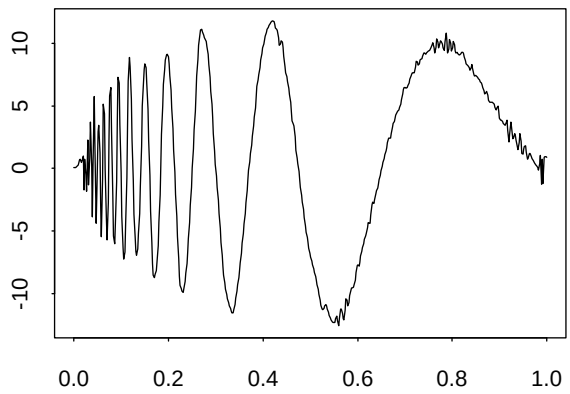


heavisine loss/n= 0.44

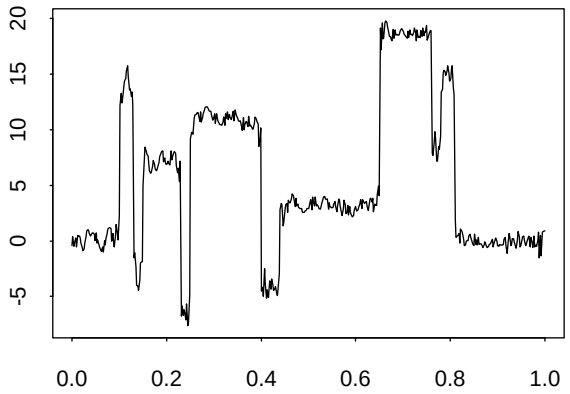


Bernoulli noise variance 1, sure shrink , n= 512

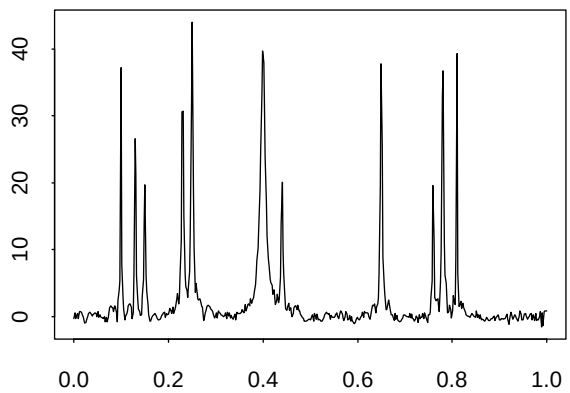
doppler loss/n= 0.259



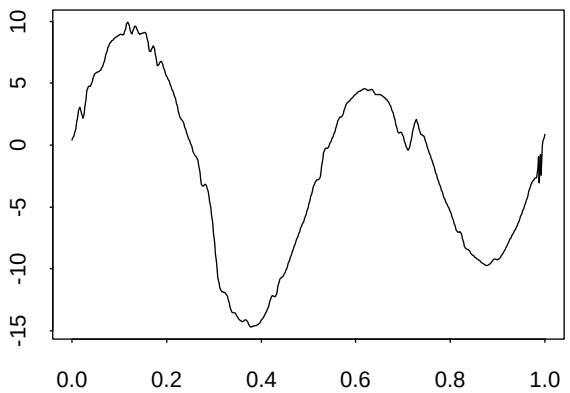
blocks loss/n= 0.539



bumps loss/n= 0.63

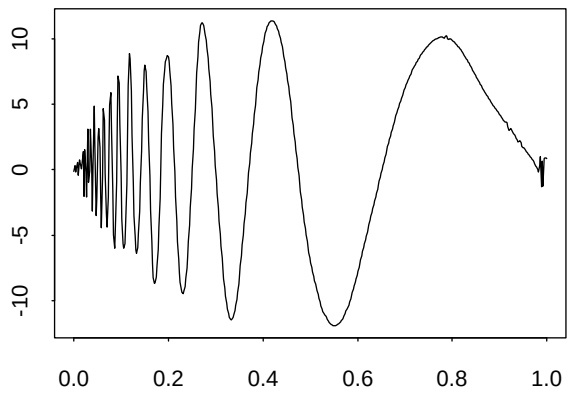


heavisine loss/n= 0.155

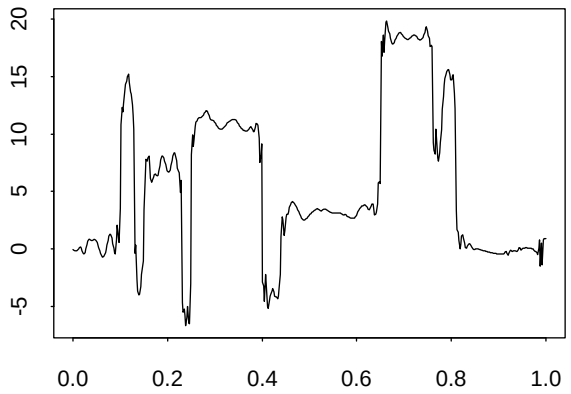


Bernoulli noise, coefficient dependent thresholds , n= 512

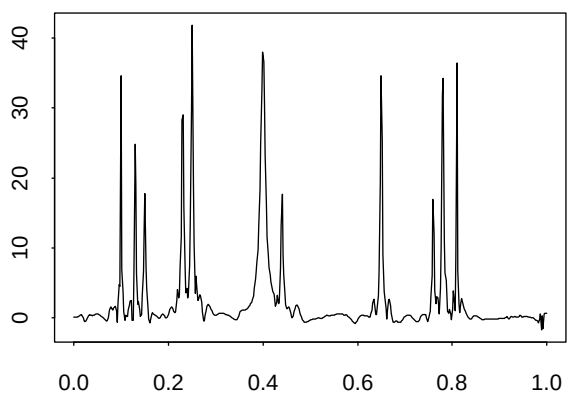
doppler loss/n= 0.274



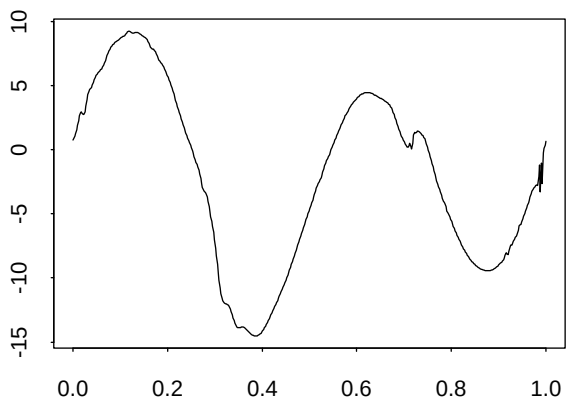
blocks loss/n= 0.928



bumps loss/n= 1.17

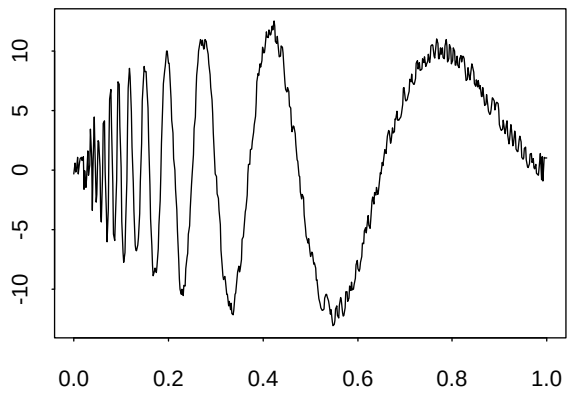


heavisine loss/n= 0.163

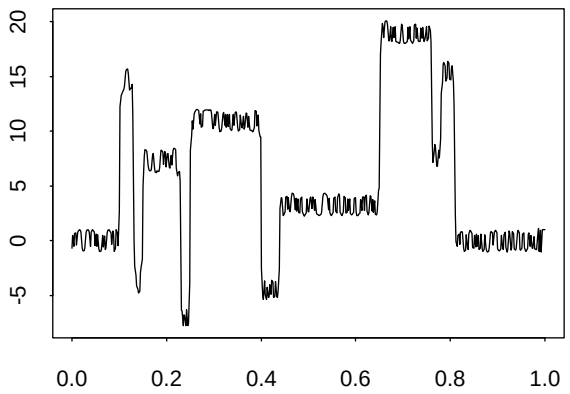


Bernoulli noise, James-Stein , n= 512

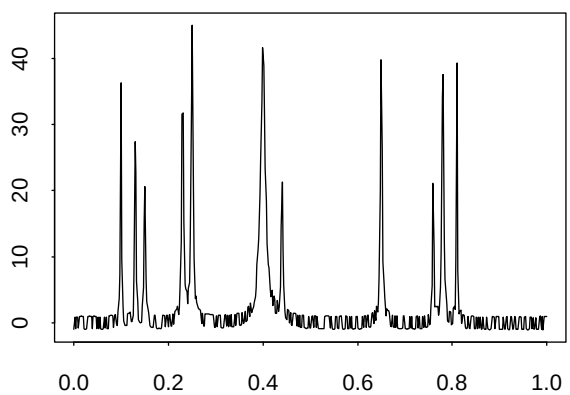
doppler loss/n= 0.519



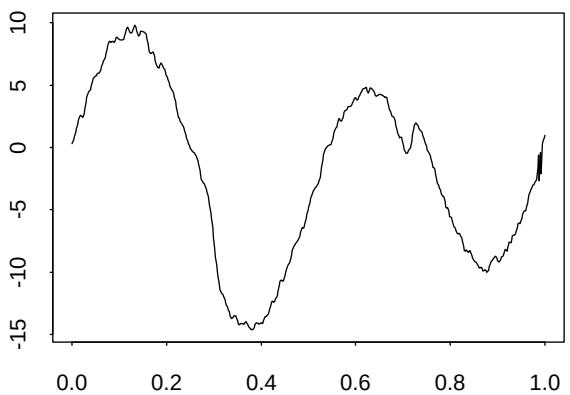
blocks loss/n= 0.772



bumps loss/n= 0.911

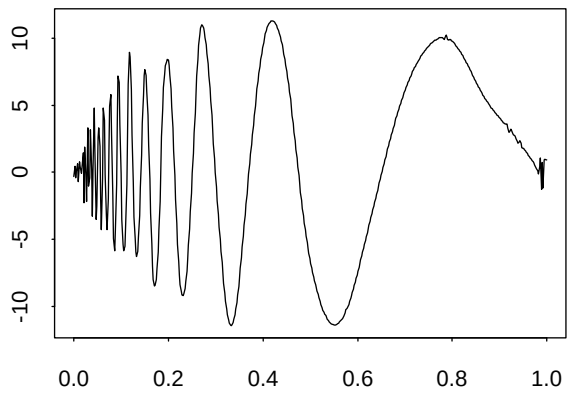


heavisine loss/n= 0.169

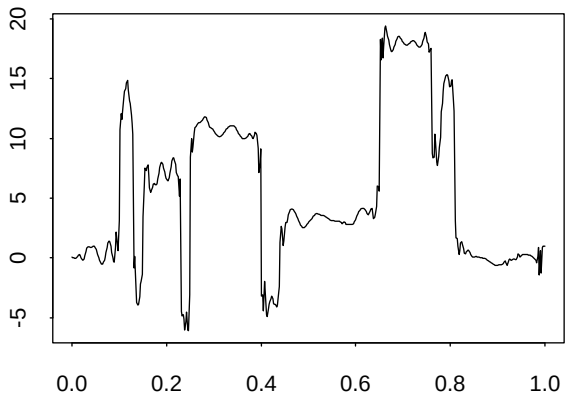


Bernoulli noise variance 1, threshold optimal gaussian , n= 512

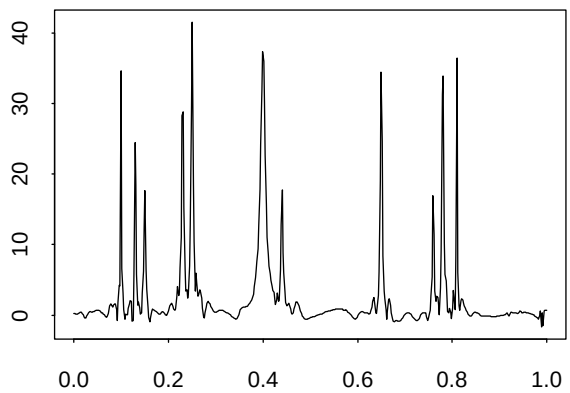
doppler loss/n= 0.358



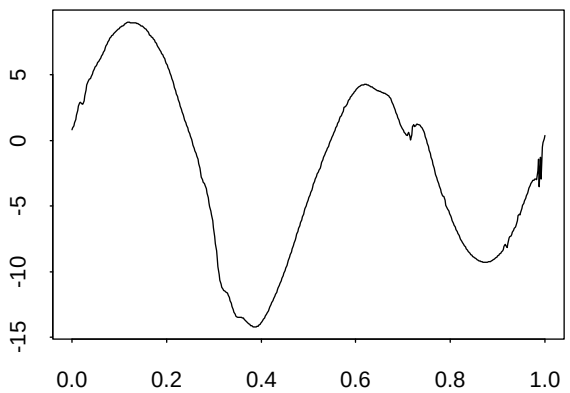
blocks loss/n= 1.13



bumps loss/n= 1.33

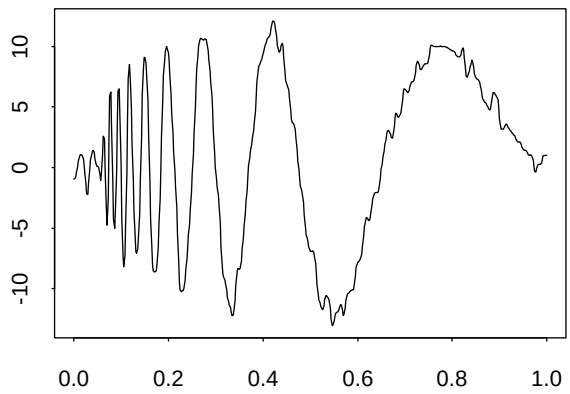


heavisine loss/n= 0.248

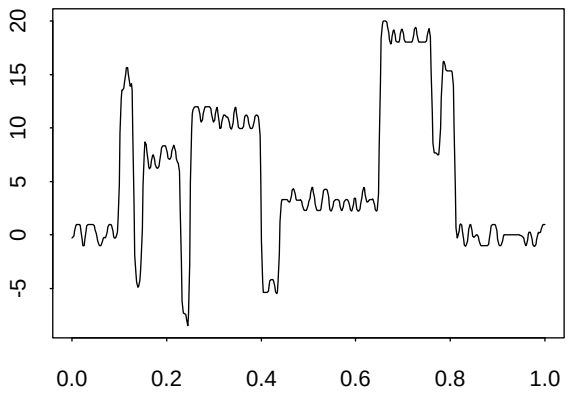


Bernoulli noise variance 1, median filter , n= 512

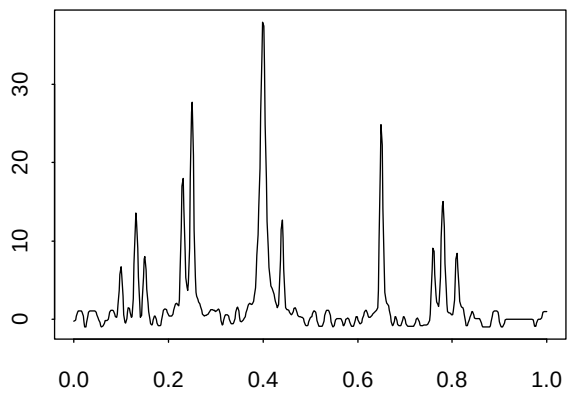
doppler loss/n= 0.929



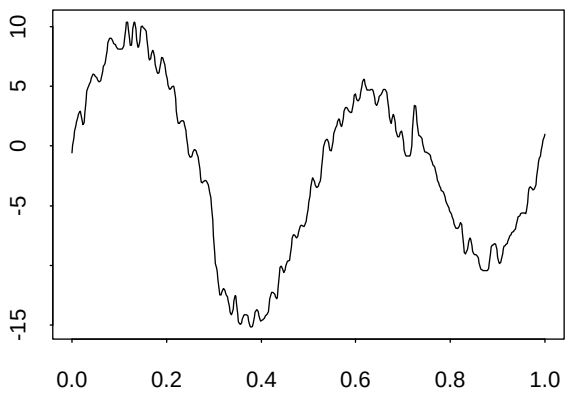
blocks loss/n= 1.33

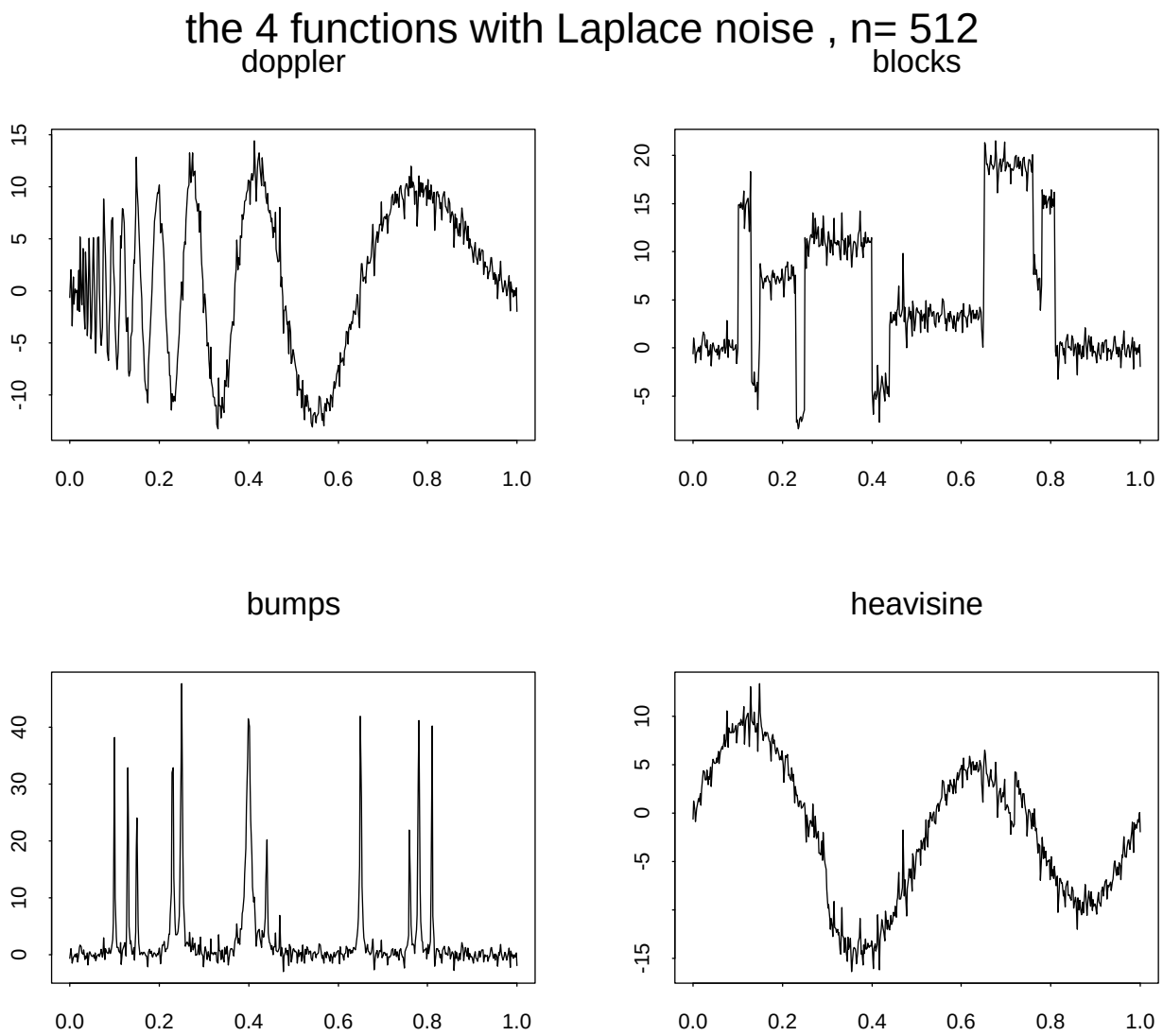


bumps loss/n= 10.8



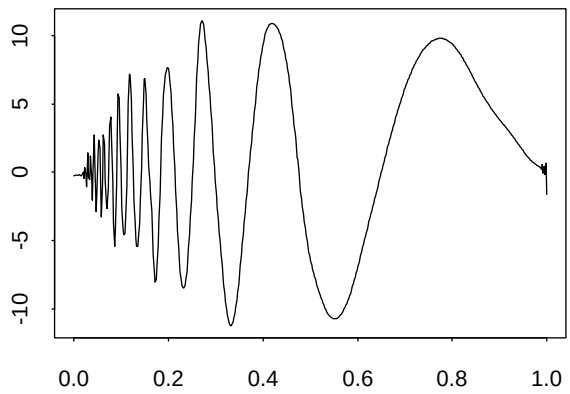
heavisine loss/n= 0.449



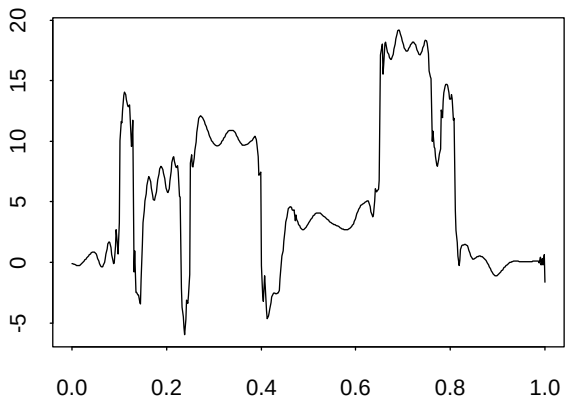

the 4 functions with Laplace noise , n= 512
doppler
blocks
bumps
heavisine
-10
-5
0
5
10
15
-5
0
5
10
15
20
0
10
20
30
40
-15
-5
0
5
10
0.0
0.2
0.4
0.6
0.8
1.0

Laplace noise, thresholds sqrt(2 log n) , n= 512

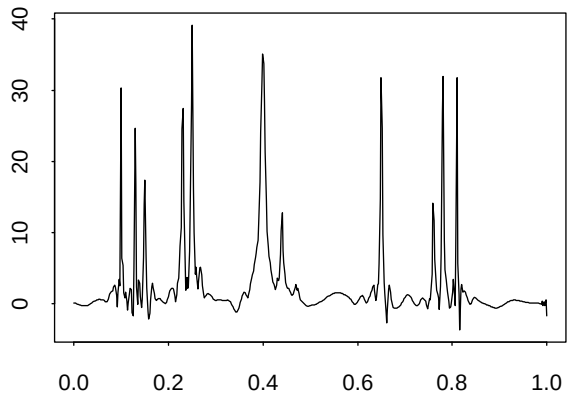
doppler loss/n= 1.04



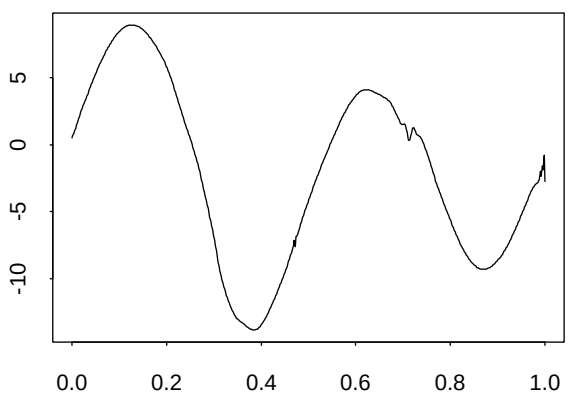
blocks loss/n= 2.2



bumps loss/n= 2.97

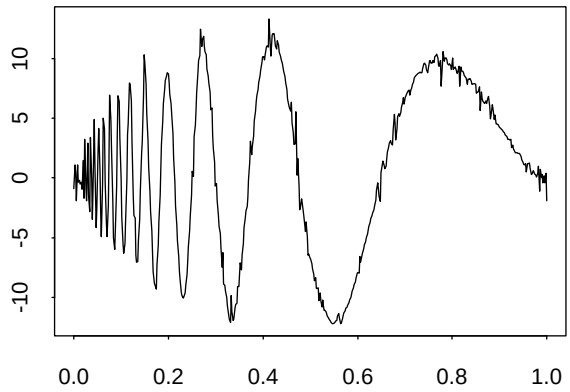


heavisine loss/n= 0.424

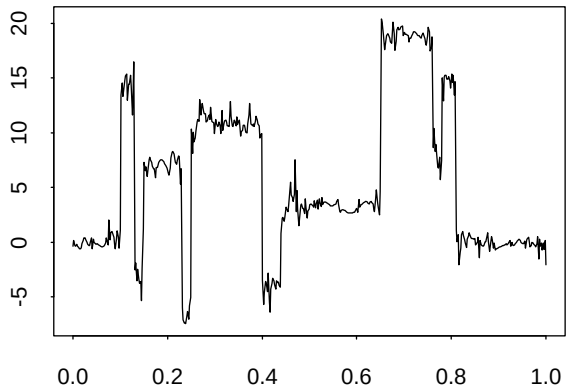


Laplace noise variance 1, sure shrink , n= 512

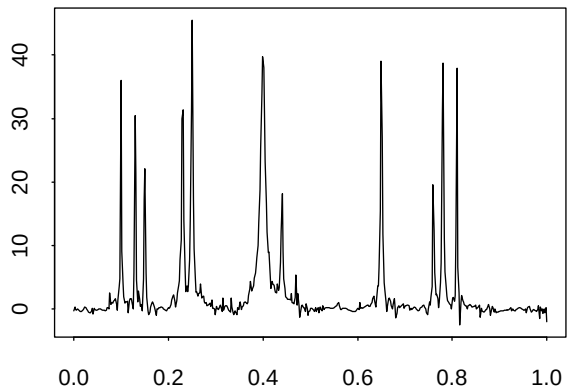
doppler loss/n= 0.381



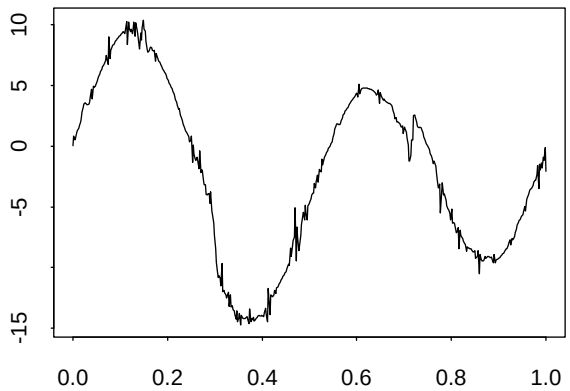
blocks loss/n= 0.605



bumps loss/n= 0.755

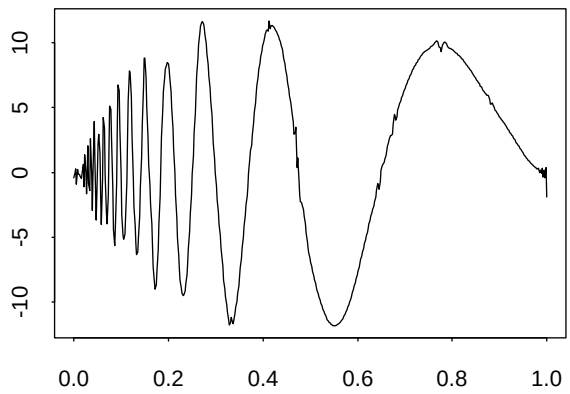


heavisine loss/n= 0.235

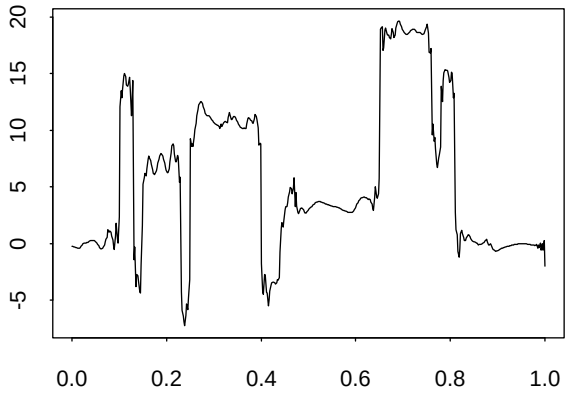


Laplace noise, coefficient dependent thresholds , n= 512

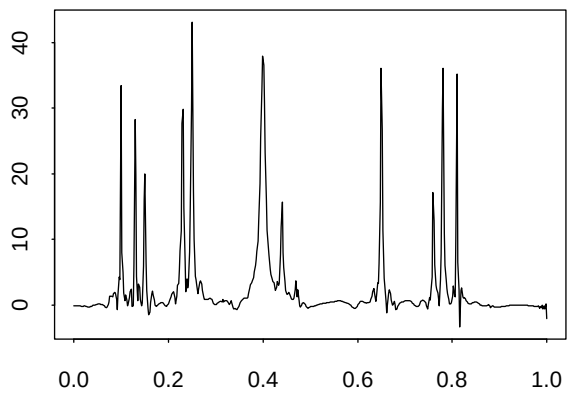
doppler loss/n= 0.365



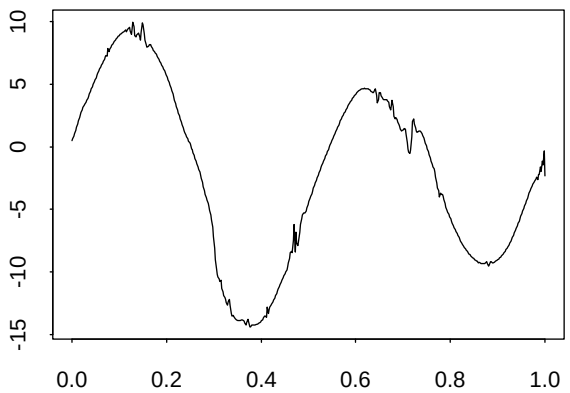
blocks loss/n= 0.84



bumps loss/n= 1.21

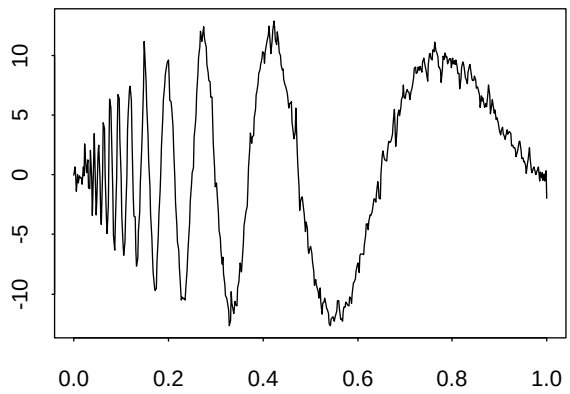


heavisine loss/n= 0.148

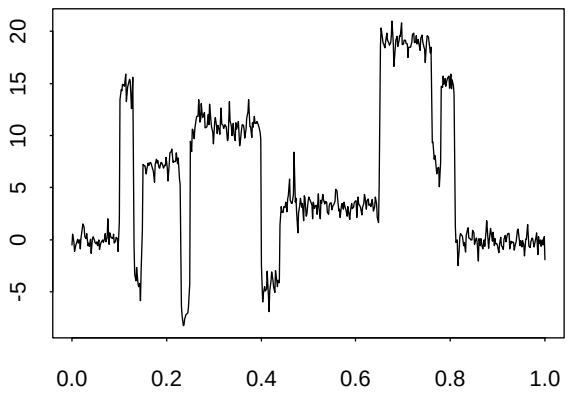


Laplace noise, James-Stein , n= 512

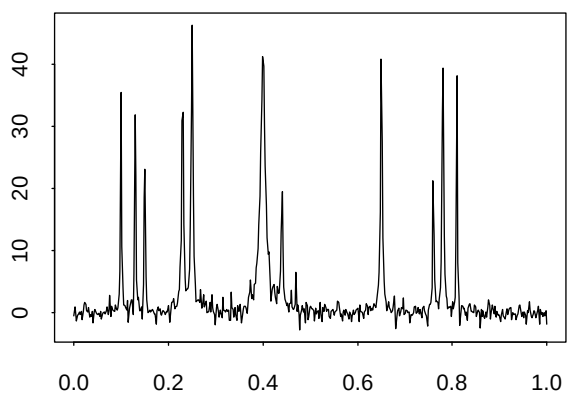
doppler loss/n= 0.608



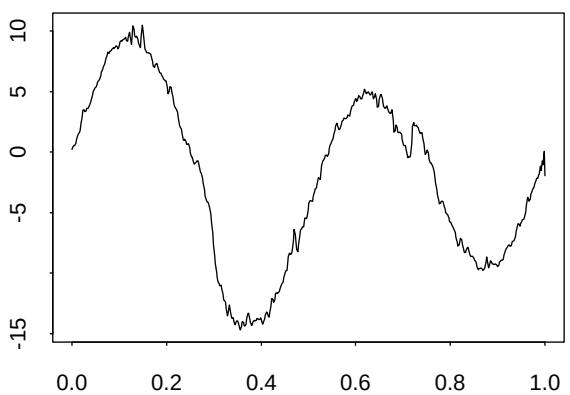
blocks loss/n= 0.785



bumps loss/n= 1.01

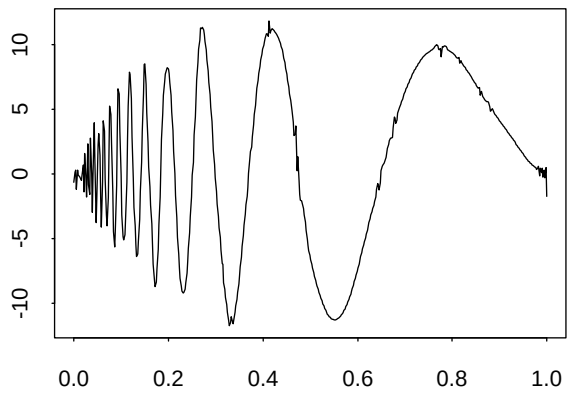


heavisine loss/n= 0.186

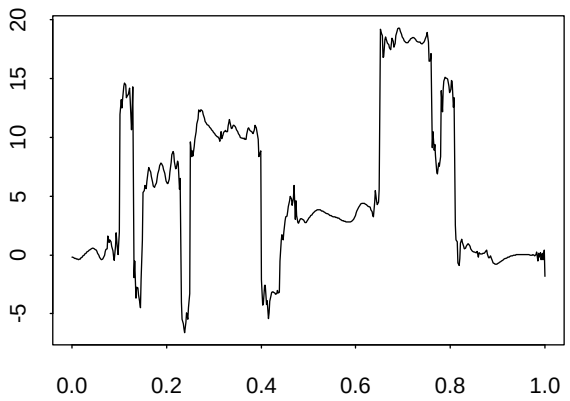


Laplace noise variance 1, threshold optimal gaussian , n= 512

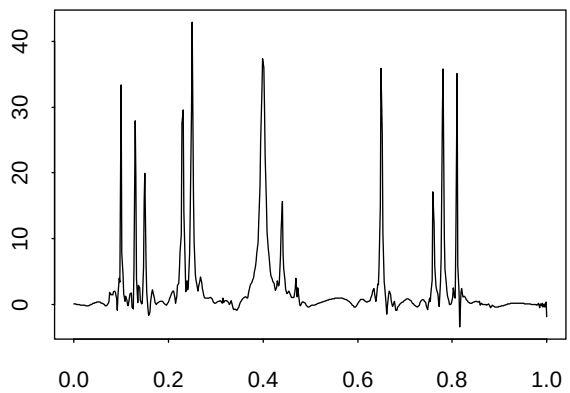
doppler loss/n= 0.47



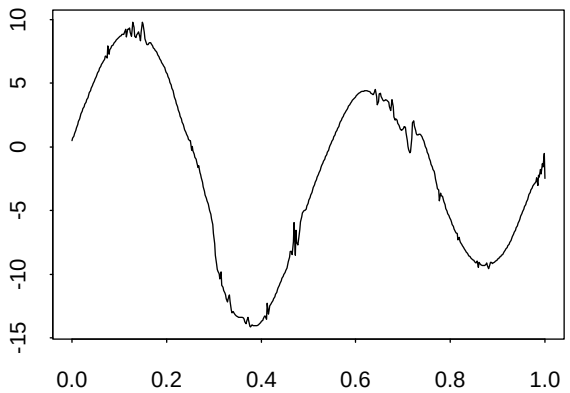
blocks loss/n= 1.02



bumps loss/n= 1.39

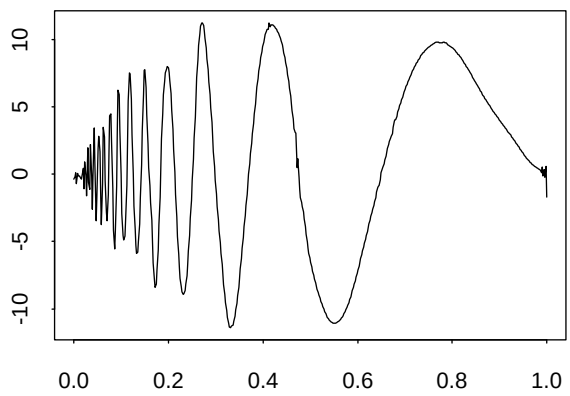


heavisine loss/n= 0.238

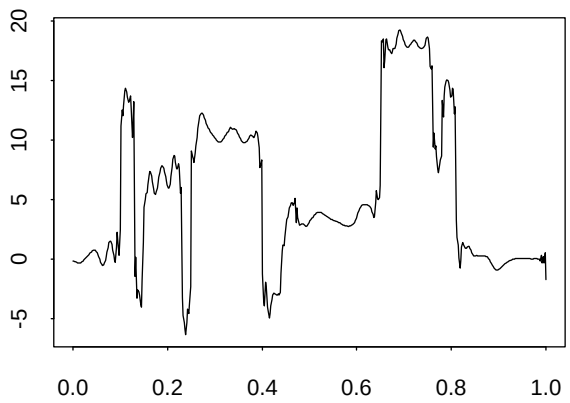


Laplace noise variance 1, threshold optimal lapace , n= 512

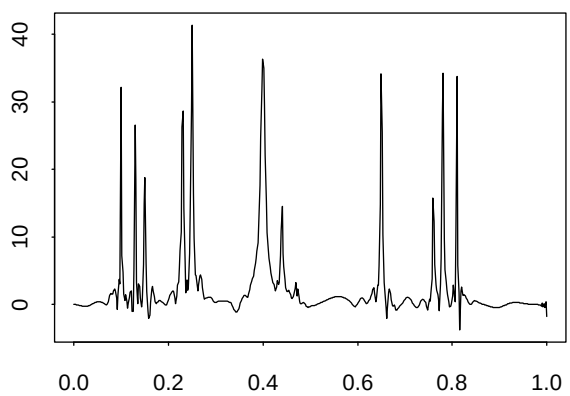
doppler loss/n= 0.658



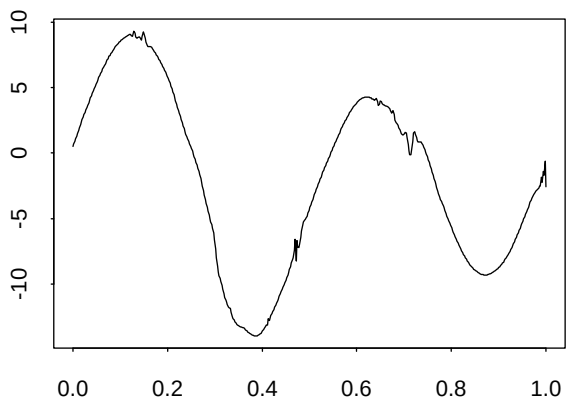
blocks loss/n= 1.45



bumps loss/n= 1.97

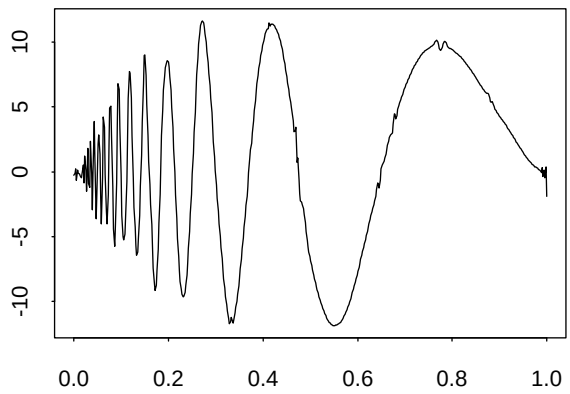


heavisine loss/n= 0.292

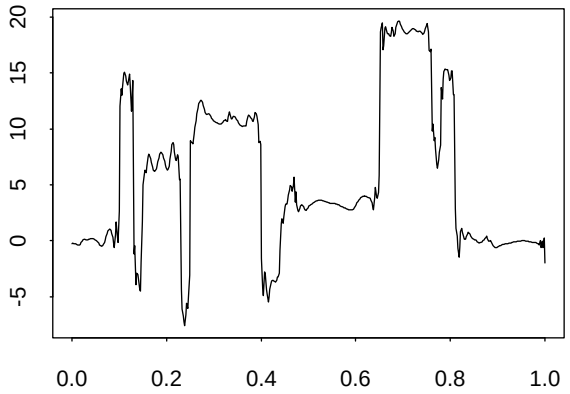


Laplace noise variance 1, c. d. t. optimal lapace , n= 512

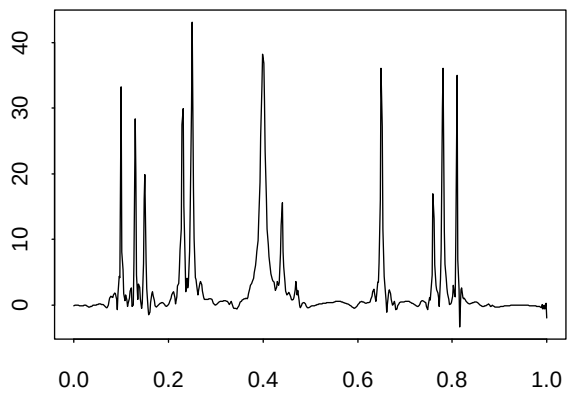
doppler loss/n= 0.349



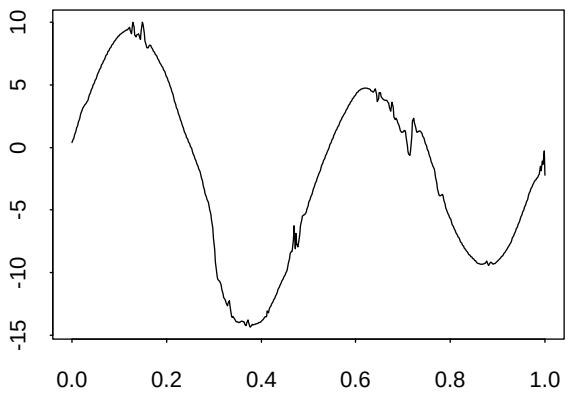
blocks loss/n= 0.803



bumps loss/n= 1.17

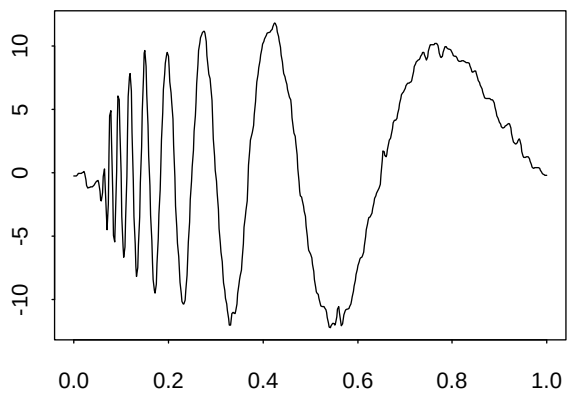


heavisine loss/n= 0.132

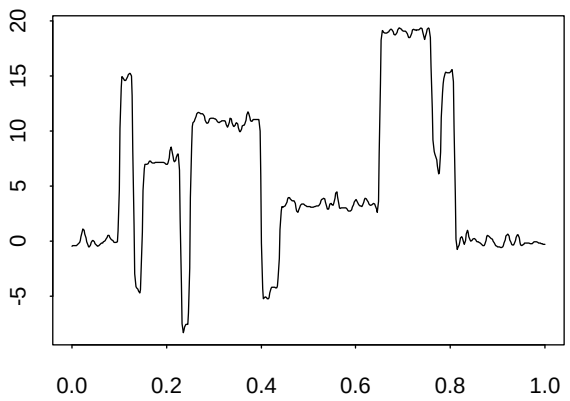


Laplace noise variance 1, median filter , n= 512

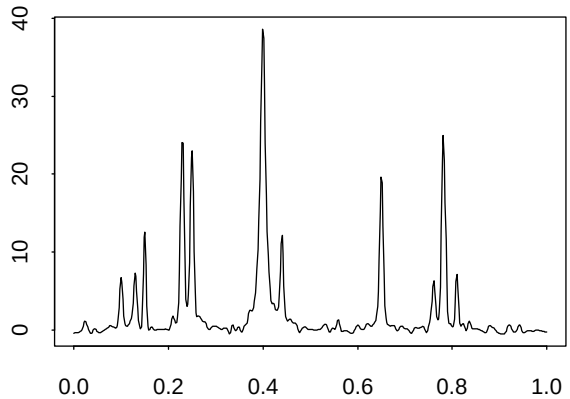
doppler loss/n= 0.761



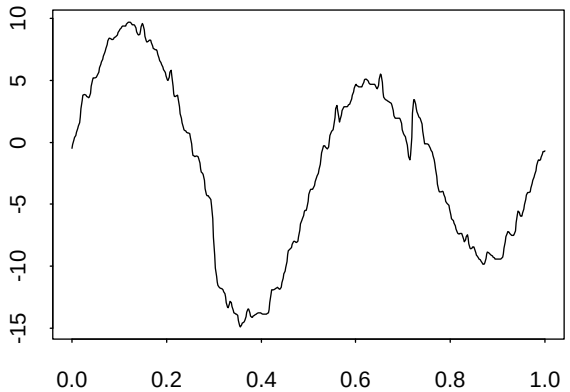
blocks loss/n= 1.04

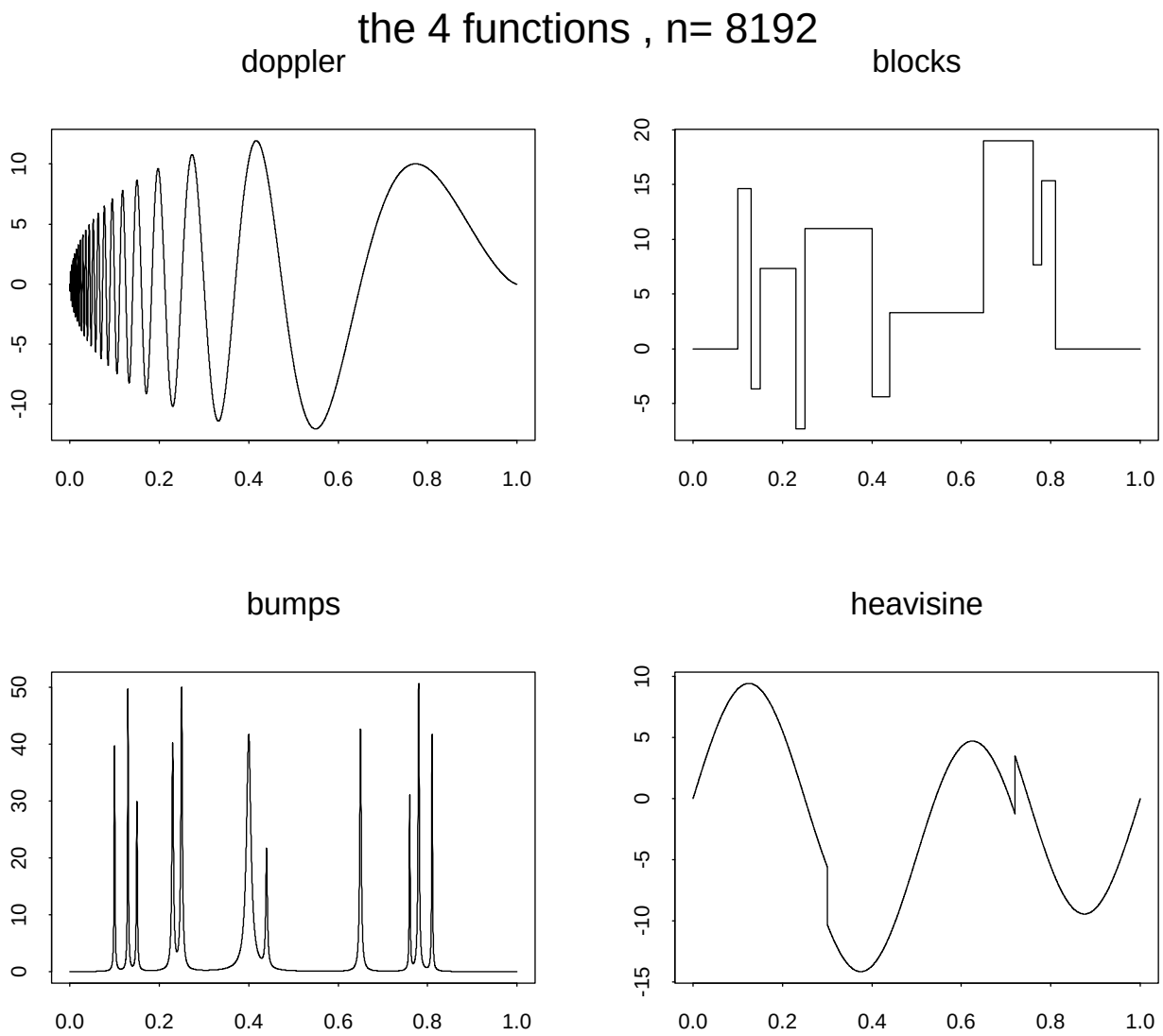


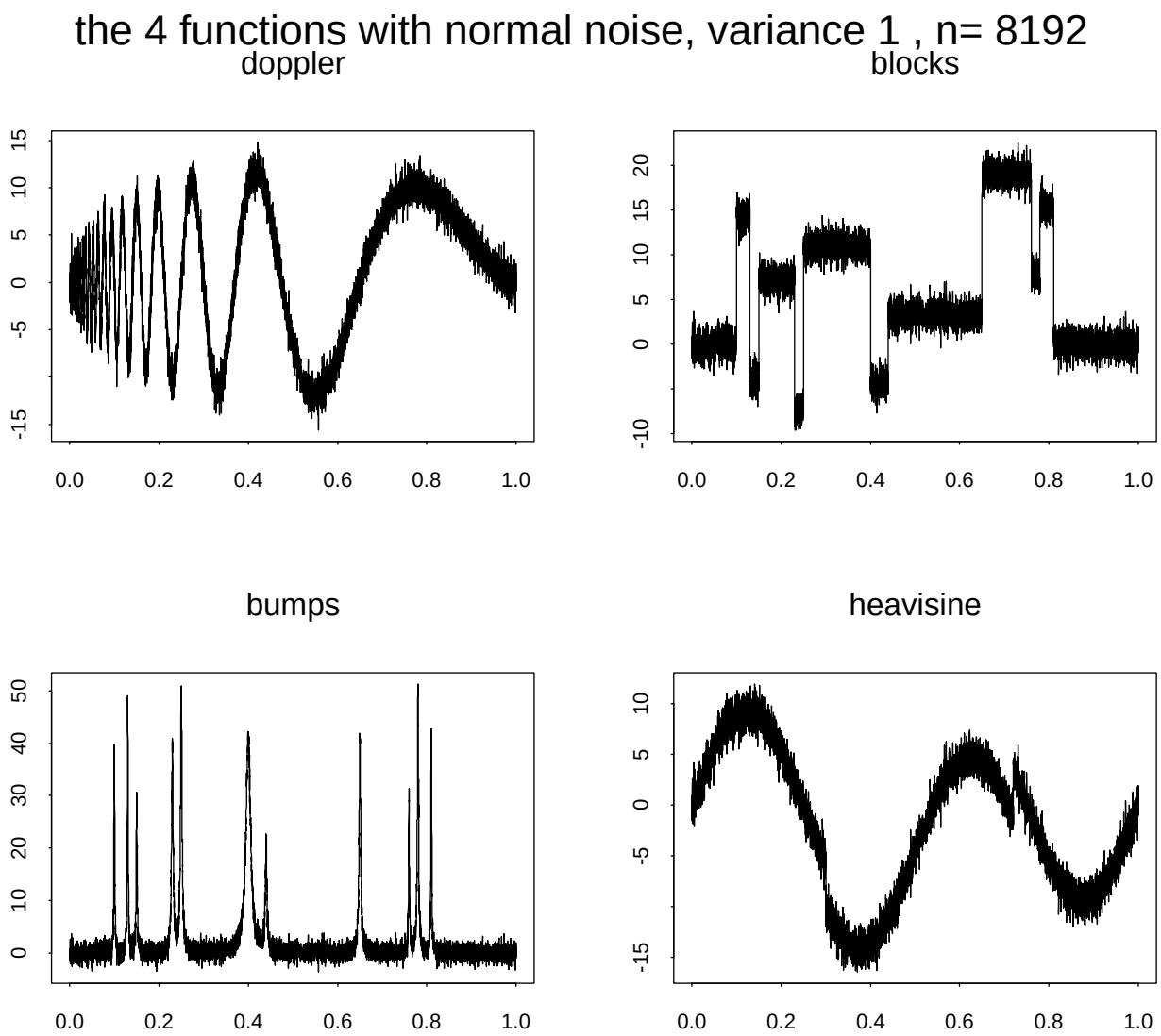
bumps loss/n= 11.1



heavisine loss/n= 0.169

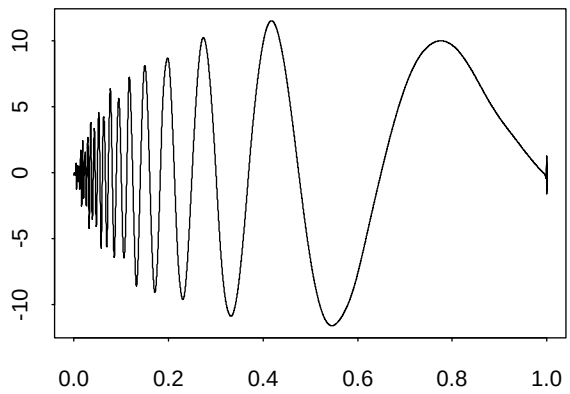



the 4 functions , n= 8192
doppler
blocks
bumps
heavisine
-10
-5
0
5
10
-5
0
5
10
15
20
0
10
20
30
40
50
-15
-10
-5
0
5
10
0.0
0.2
0.4
0.6
0.8
1.0

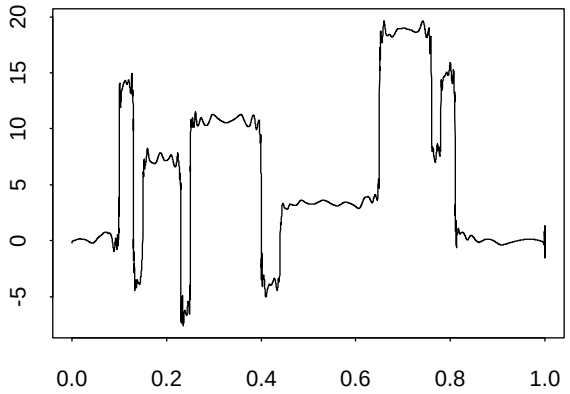

the 4 functions with normal noise, variance 1 , n= 8192
doppler
blocks
bumps
heavisine
-15
-5
0
5
10
15
-10
0
5
10
15
20
0
10
20
30
40
50
0.0
0.2
0.4
0.6
0.8
1.0

normal noise variance 1, thresholds sqrt(2 log n) , n= 8192

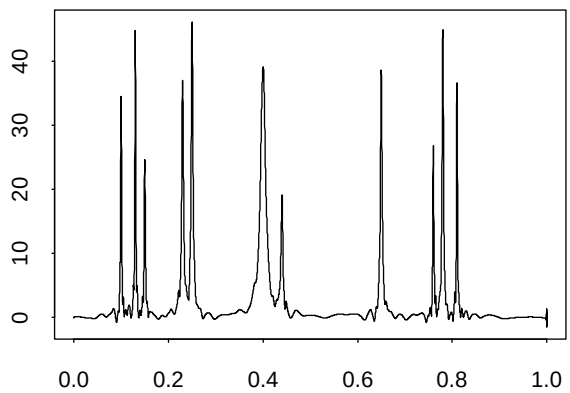
doppler loss/n= 0.175



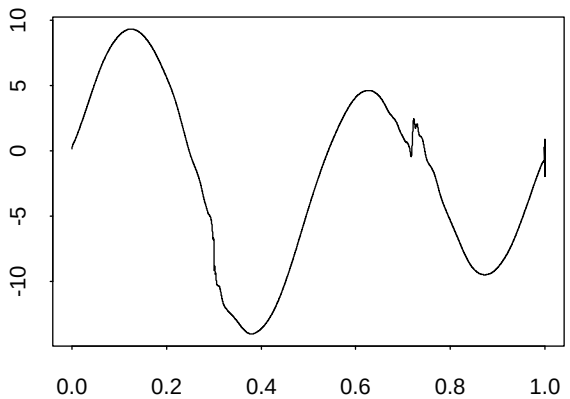
blocks loss/n= 0.463



bumps loss/n= 0.492

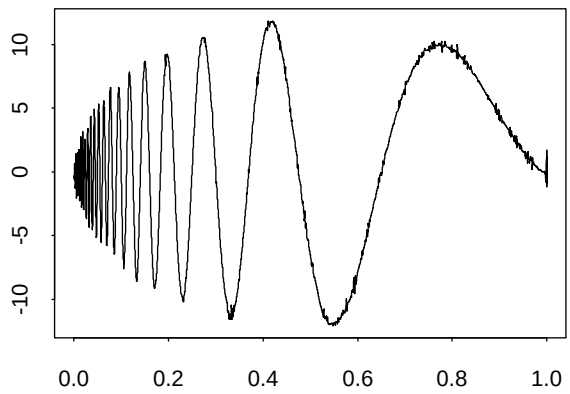


heavisine loss/n= 0.0841

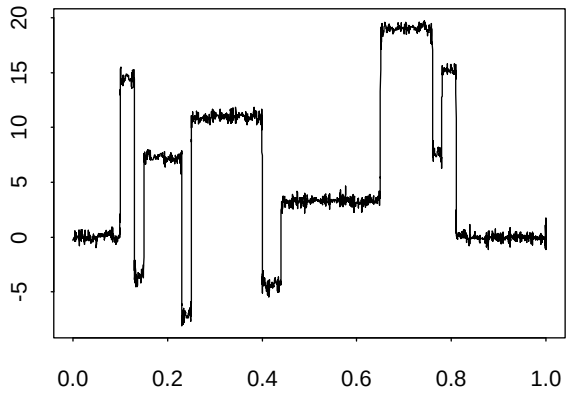


normal noise variance 1, sure shrink , n= 8192

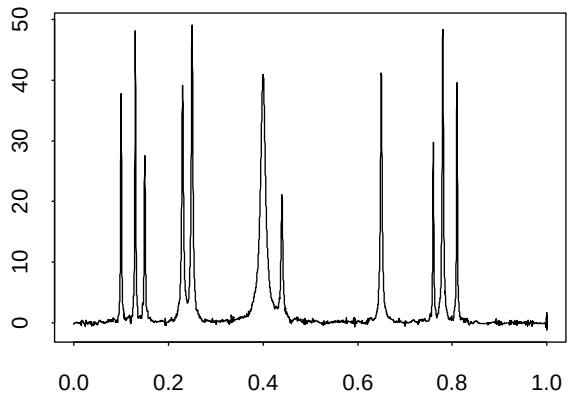
doppler loss/n= 0.0424



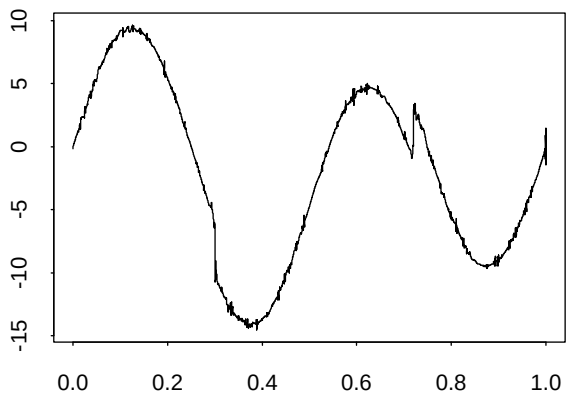
blocks loss/n= 0.139



bumps loss/n= 0.0932

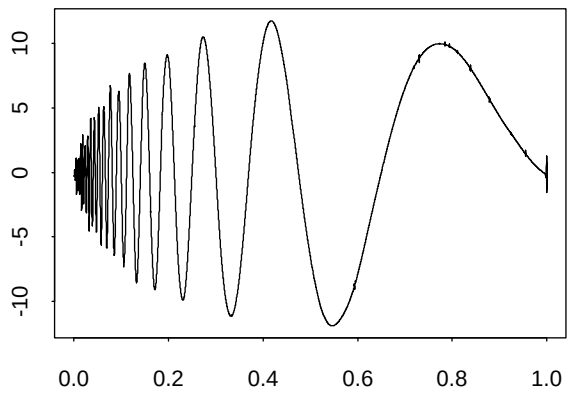


heavisine loss/n= 0.0337

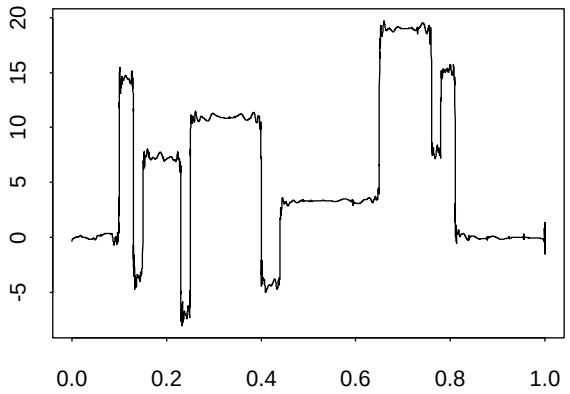


normal noise variance 1, coefficient dependent thresholds , n= 8192

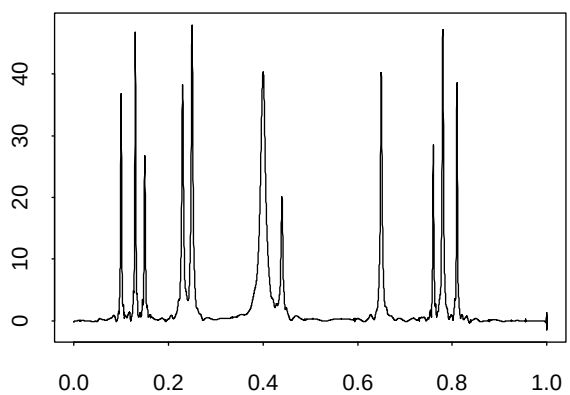
doppler loss/n= 0.0523



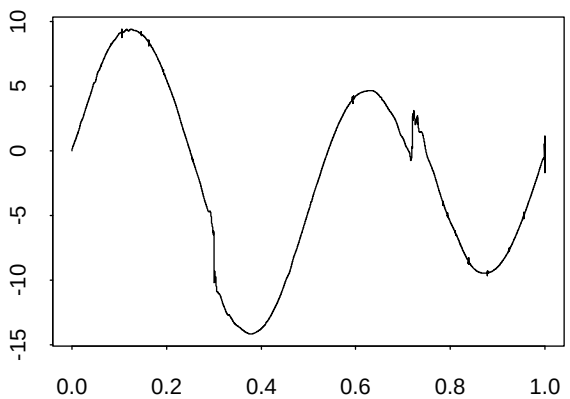
blocks loss/n= 0.181



bumps loss/n= 0.168

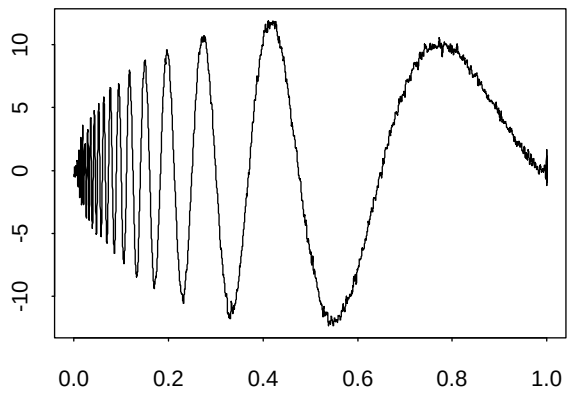


heavisine loss/n= 0.0241

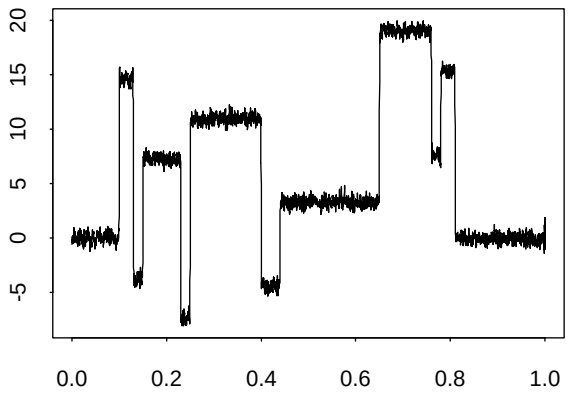


normal noise variance 1, denoised with James-Stein , n= 8192

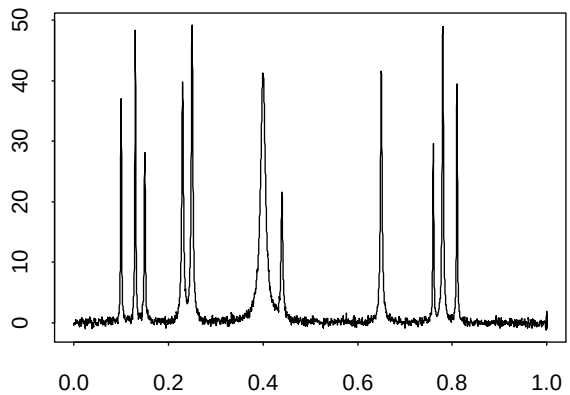
doppler loss/n= 0.0798



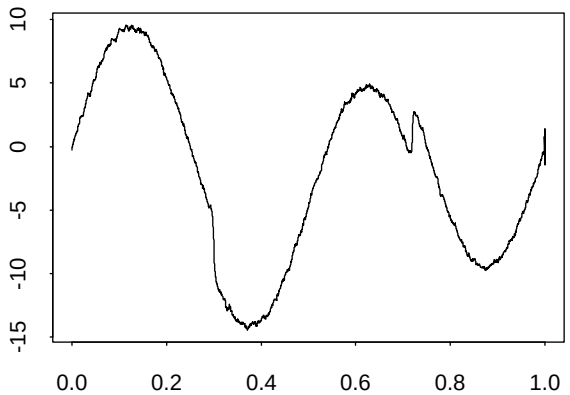
blocks loss/n= 0.272



bumps loss/n= 0.15

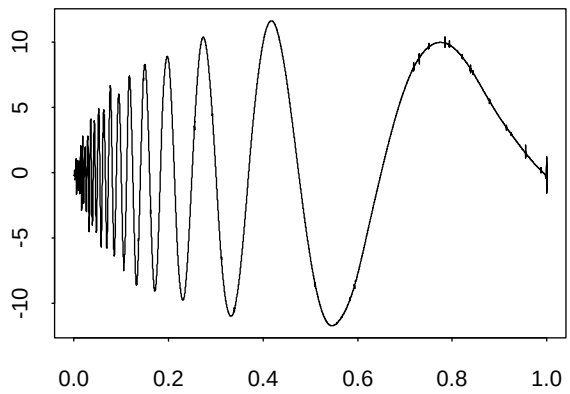


heavisine loss/n= 0.04

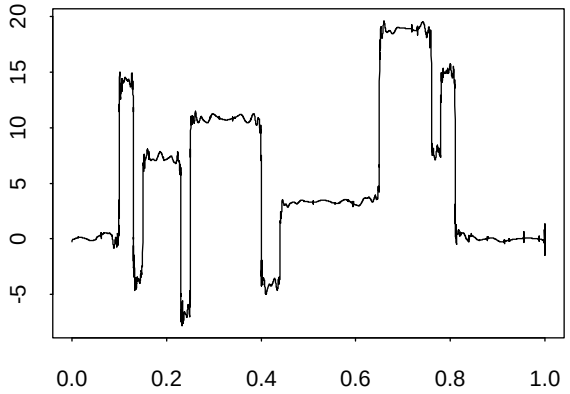


normal noise variance 1, threshold optimal gaussian , n= 8192

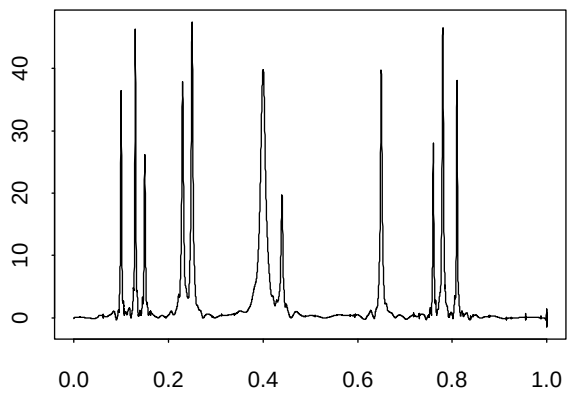
doppler loss/n= 0.0913



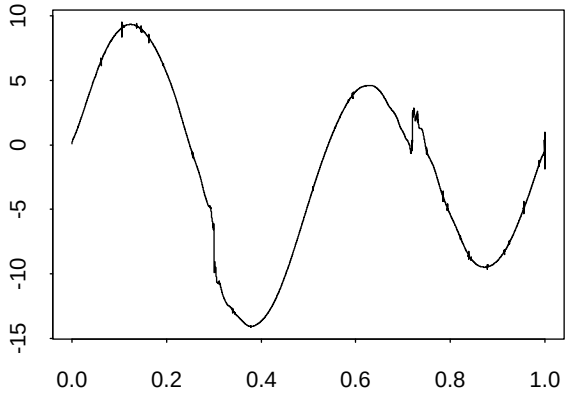
blocks loss/n= 0.24



bumps loss/n= 0.249

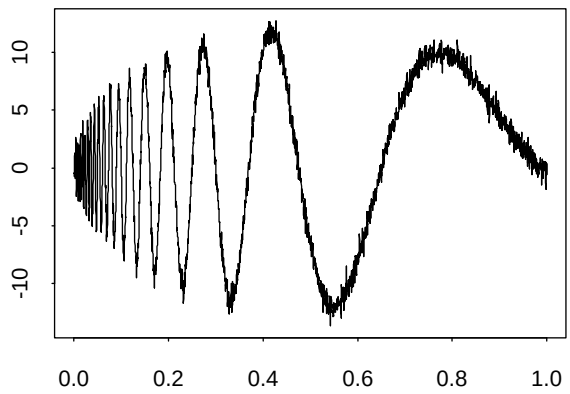


heavisine loss/n= 0.0446

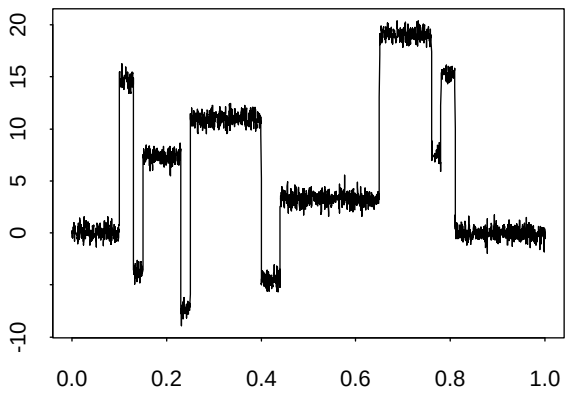


normal noise variance 1, median filter , n= 8192

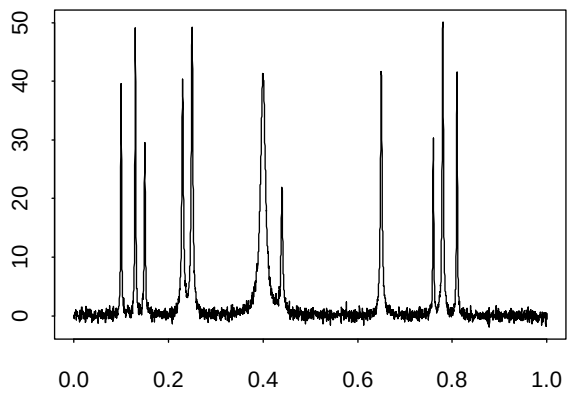
doppler loss/n= 0.25



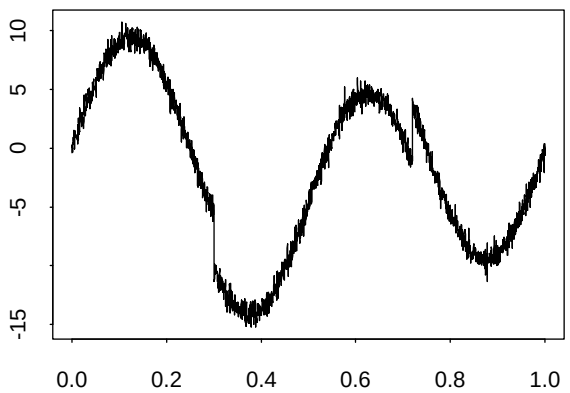
blocks loss/n= 0.306



bumps loss/n= 0.251

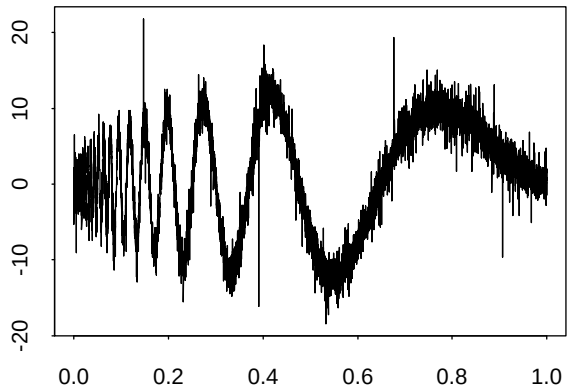


heavisine loss/n= 0.247

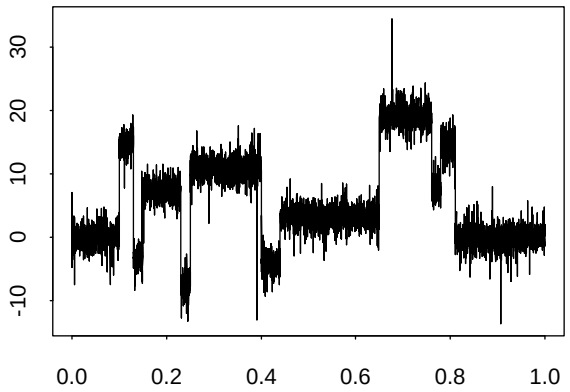


the 4 functions with student noise df=4 variance 1 , n= 8192

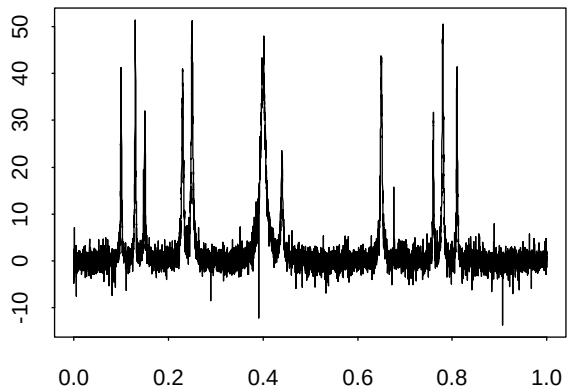
doppler



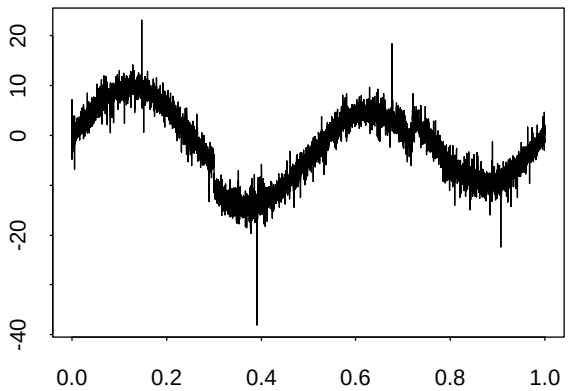
blocks



bumps

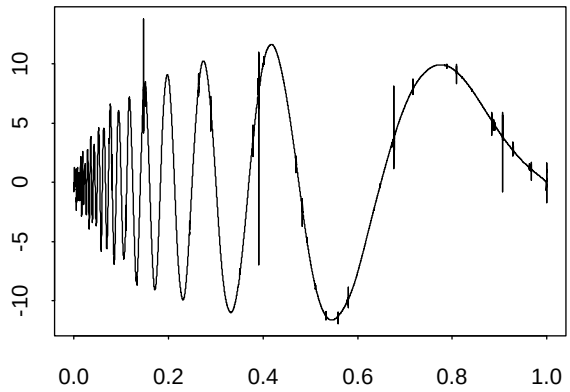


heavisine

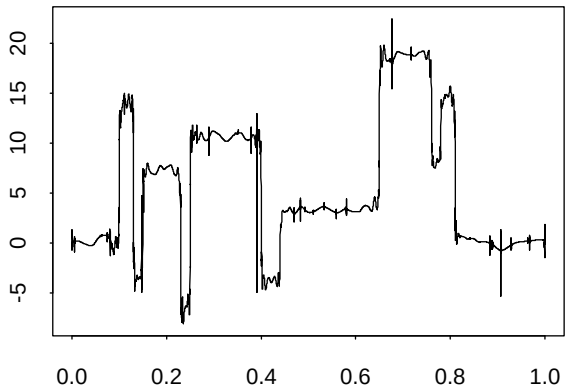


student noise df=4 variance 1, thresholds sqrt(2 log n) , n= 8192

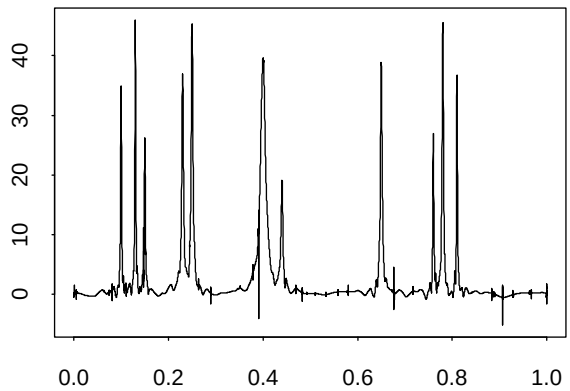
doppler loss/n= 0.189



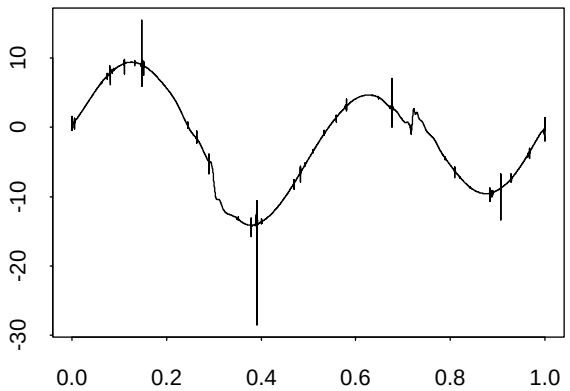
blocks loss/n= 0.544



bumps loss/n= 0.529

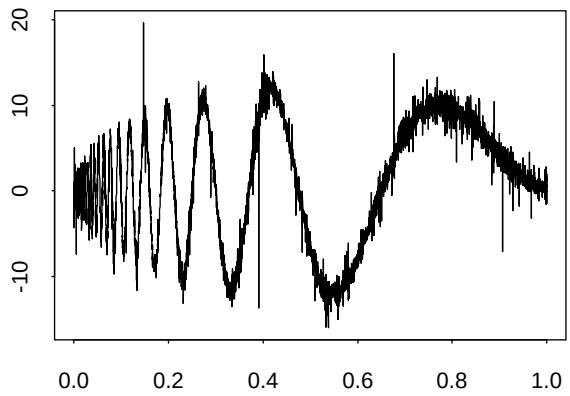


heavisine loss/n= 0.124

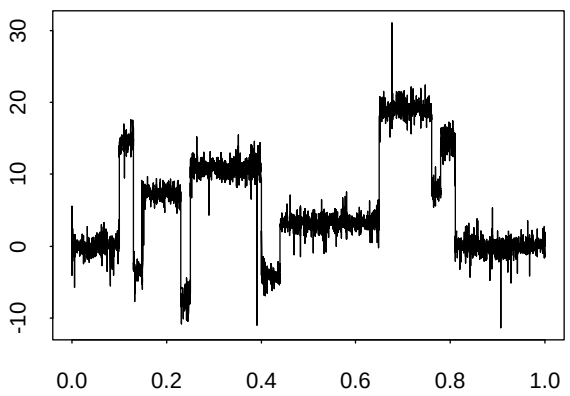


student noise df=4 variance 1, sure shrink , n= 8192

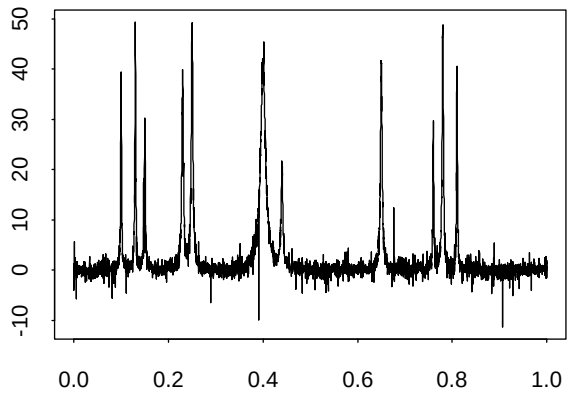
doppler loss/n= 0.665



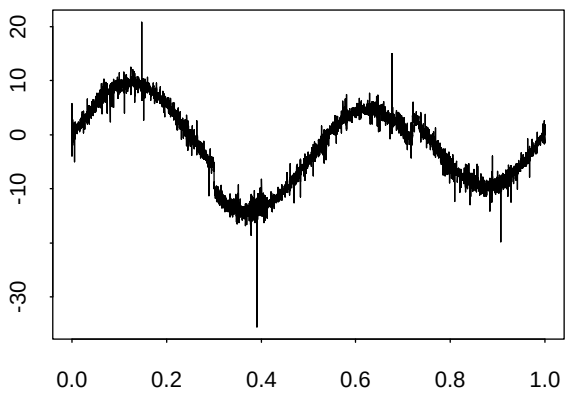
blocks loss/n= 0.732



bumps loss/n= 0.719

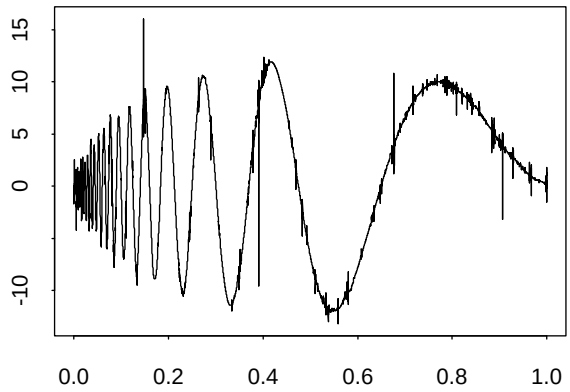


heavisine loss/n= 0.665

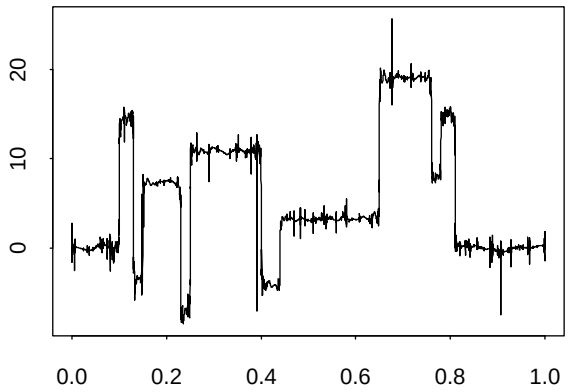


udent noise df=4 variance 1, coefficient dependent thresholds , n= 819

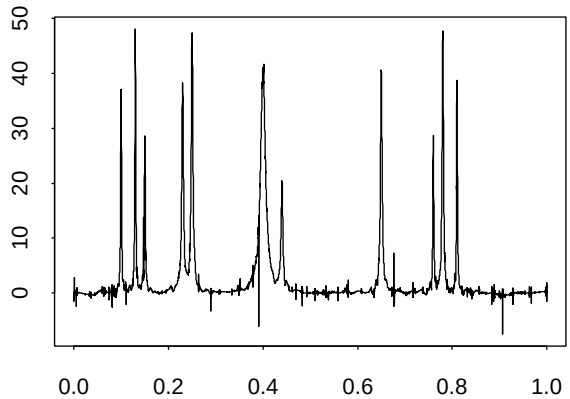
doppler loss/n= 0.142



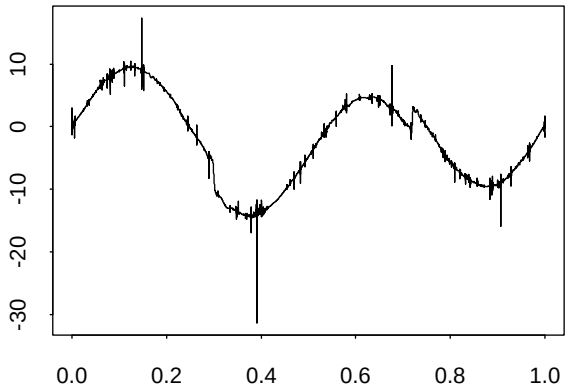
blocks loss/n= 0.309



bumps loss/n= 0.274

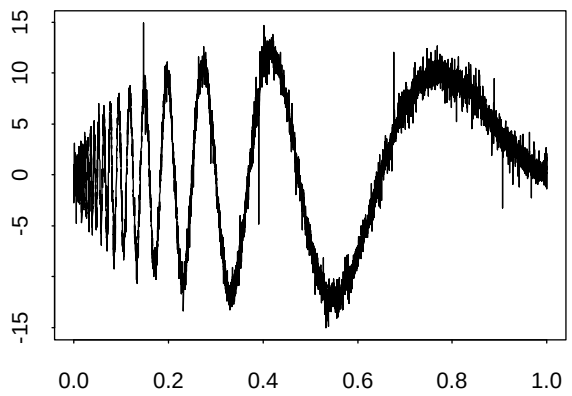


heavisine loss/n= 0.134

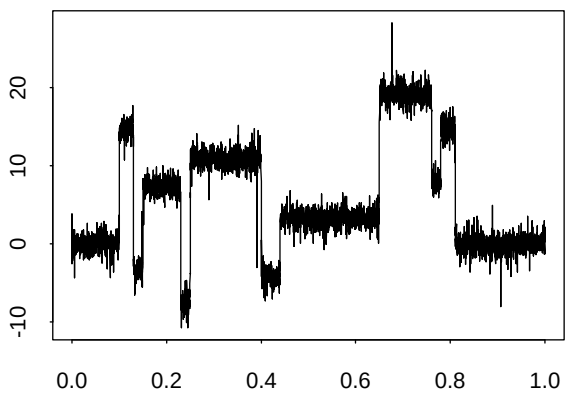


student noise df=4 variance 1, James-Stein , n= 8192

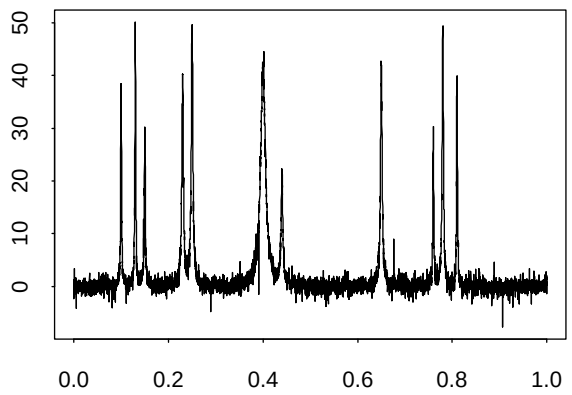
doppler loss/n= 0.602



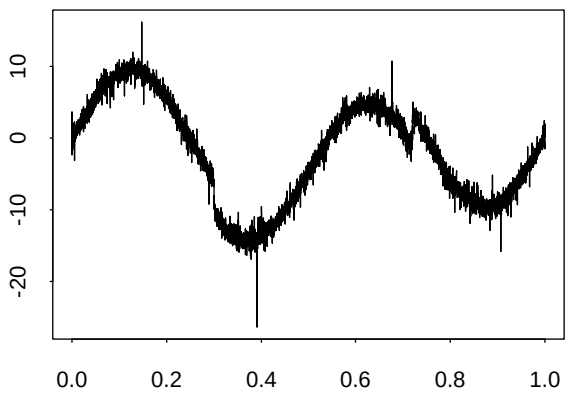
blocks loss/n= 0.783



bumps loss/n= 0.689

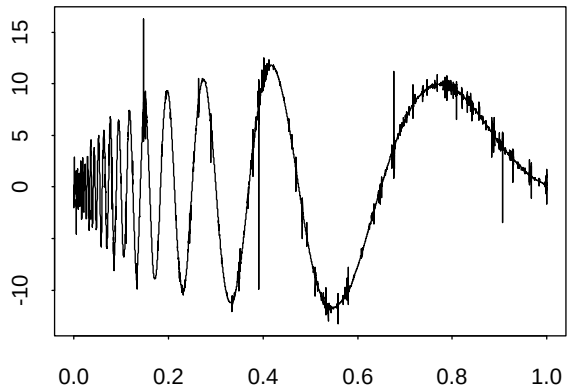


heavisine loss/n= 0.543

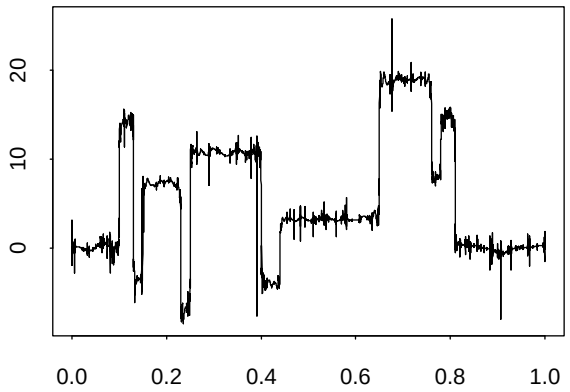


student noise df=4 variance 1, threshold optimal gaussian , n= 8192

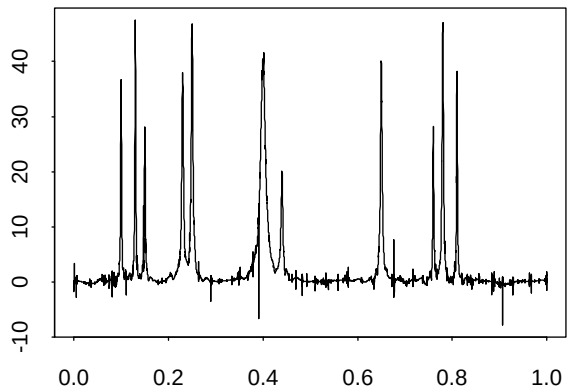
doppler loss/n= 0.183



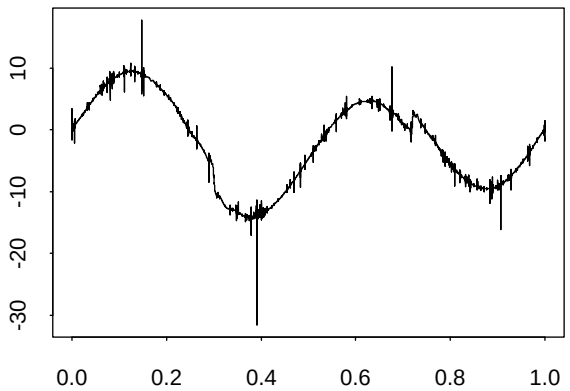
blocks loss/n= 0.389



bumps loss/n= 0.365

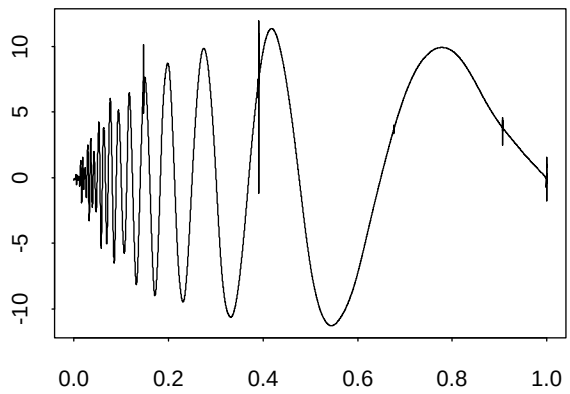


heavisine loss/n= 0.16

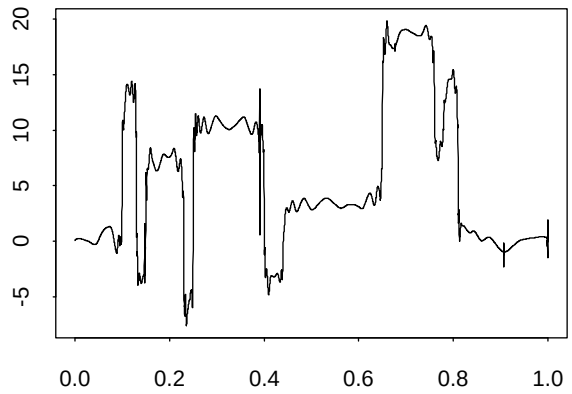


student noise df=4 variance 1, threshold optimal student , n= 8192

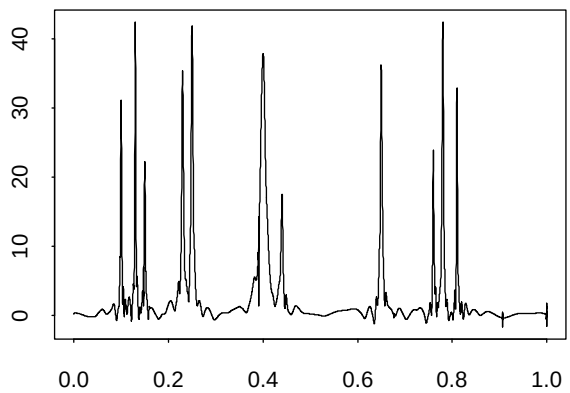
doppler loss/n= 0.438



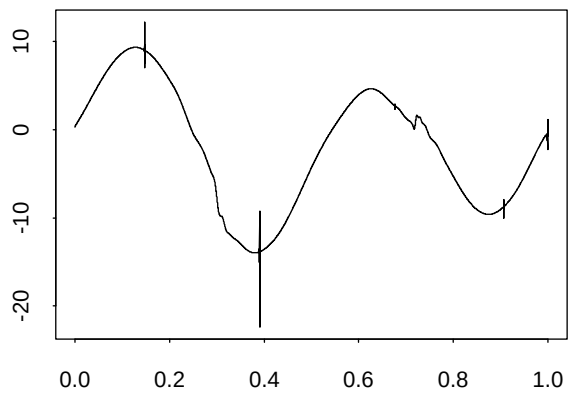
blocks loss/n= 1.22



bumps loss/n= 1.29

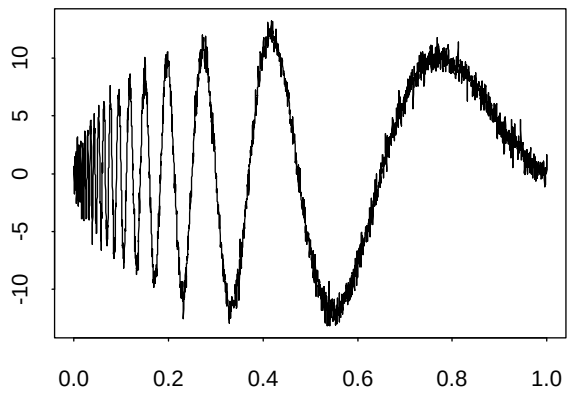


heavisine loss/n= 0.195

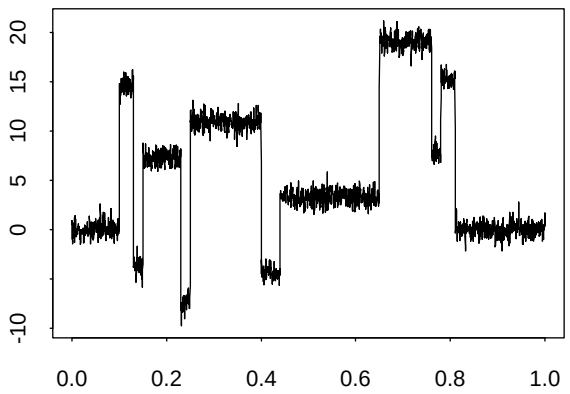


student noise df=4 variance 1, median filter , n= 8192

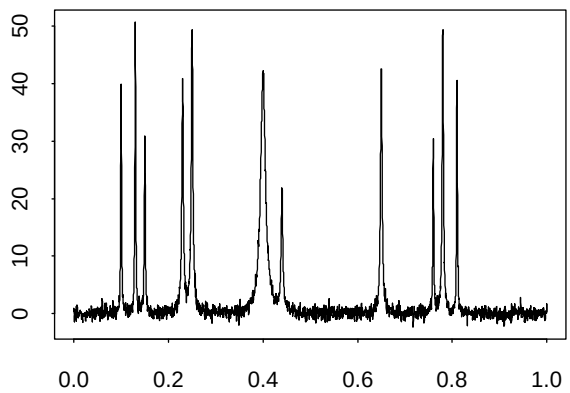
doppler loss/n= 0.351



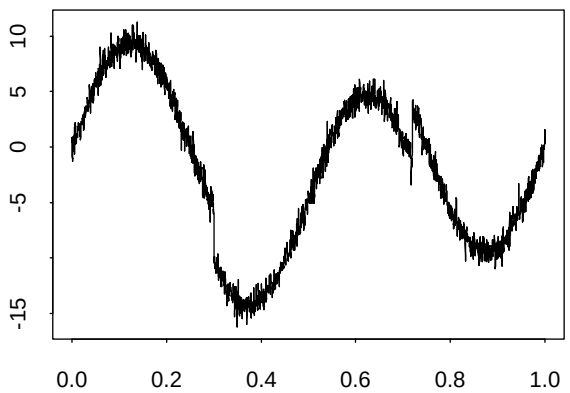
blocks loss/n= 0.409

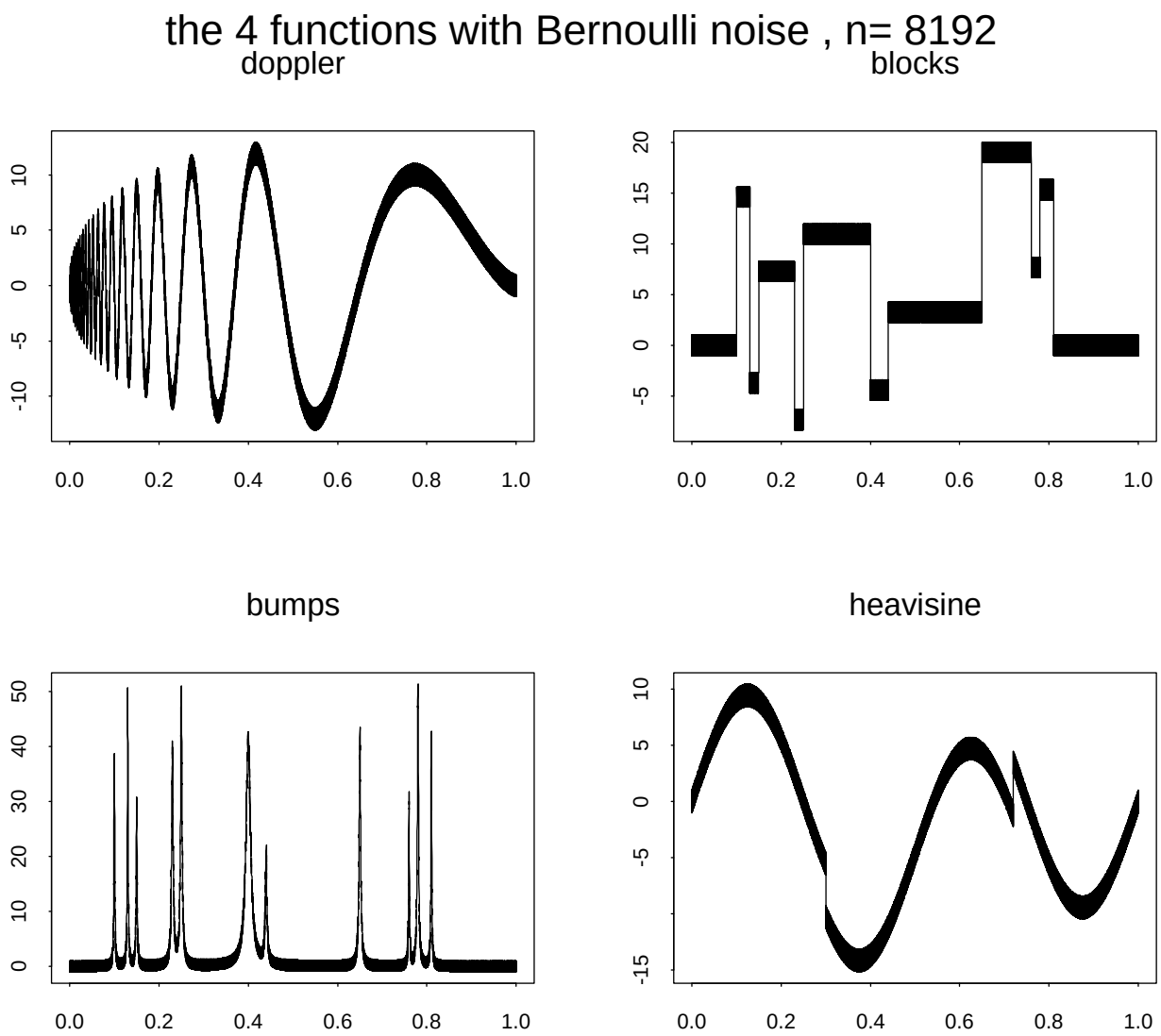


bumps loss/n= 0.358



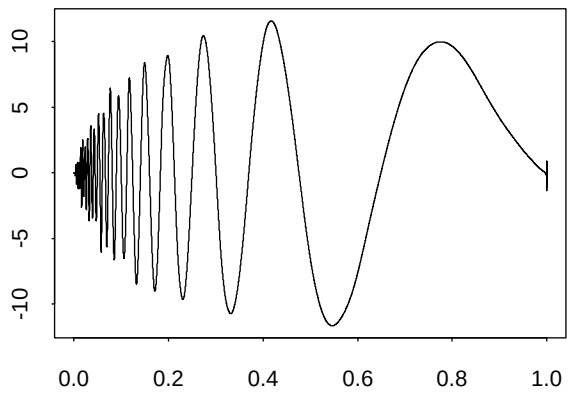
heavisine loss/n= 0.353



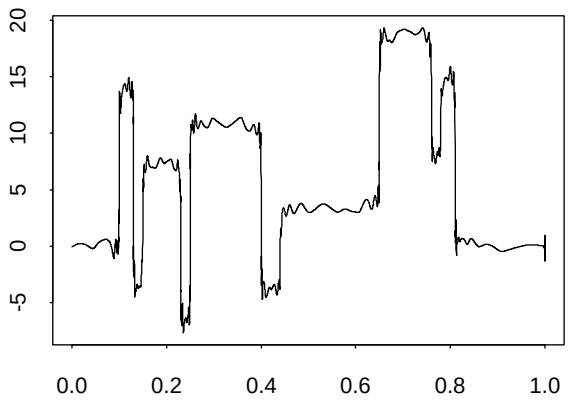

the 4 functions with Bernoulli noise , n= 8192
doppler
blocks
bumps
heavisine
-10
-5
0
5
10
-5
0
5
10
15
20
0
10
20
30
40
50
-15
-5
0
5
10
0.0
0.2
0.4
0.6
0.8
1.0

Bernoulli noise, thresholds sqrt(2 log n) , n= 8192

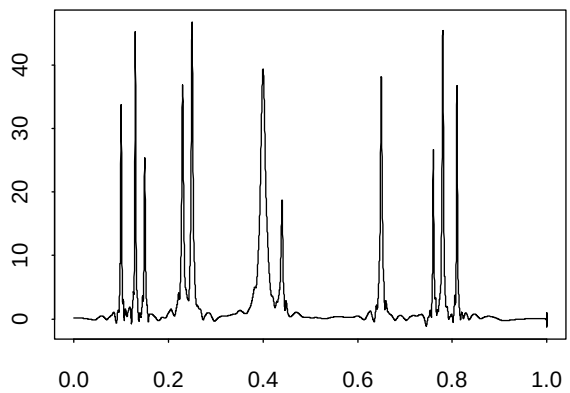
doppler loss/n= 0.157



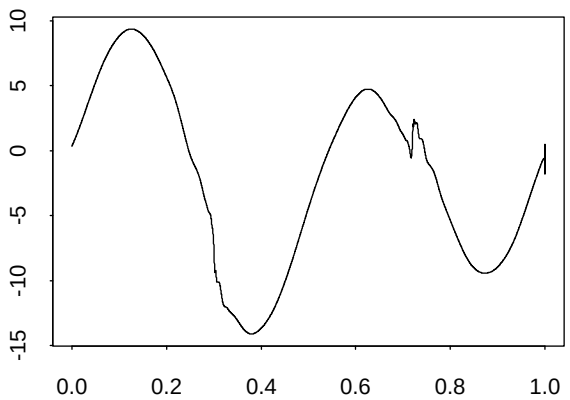
blocks loss/n= 0.474



bumps loss/n= 0.486

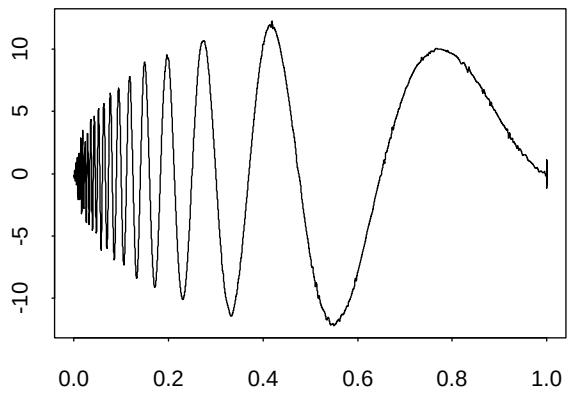


heavisine loss/n= 0.0918

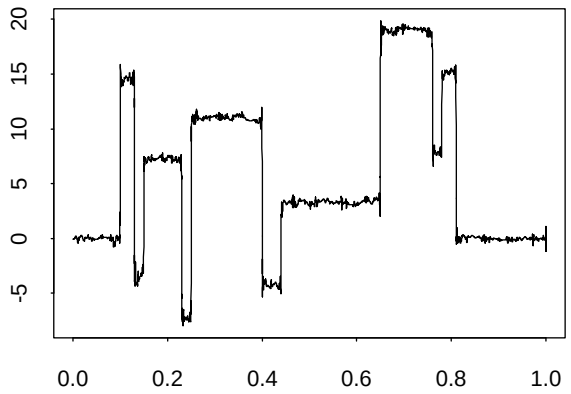


Bernoulli noise variance 1, sure shrink , n= 8192

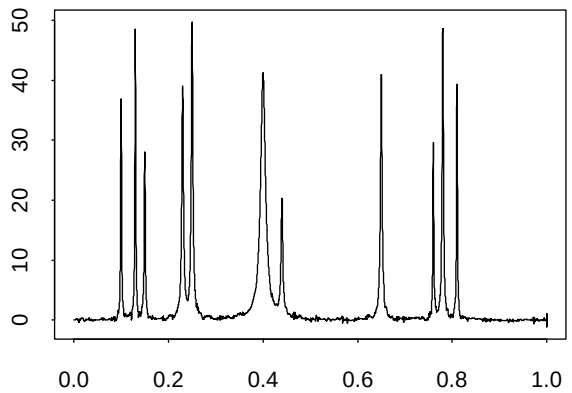
doppler loss/n= 0.0301



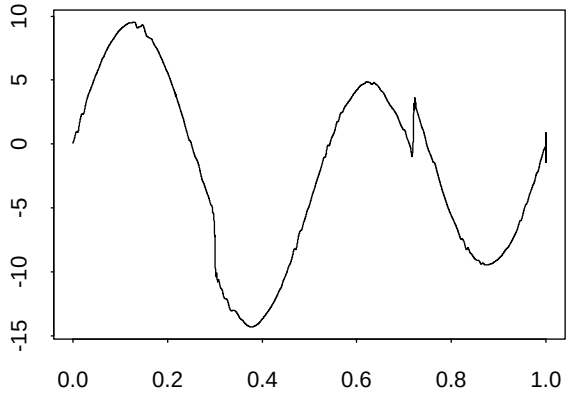
blocks loss/n= 0.128



bumps loss/n= 0.0854

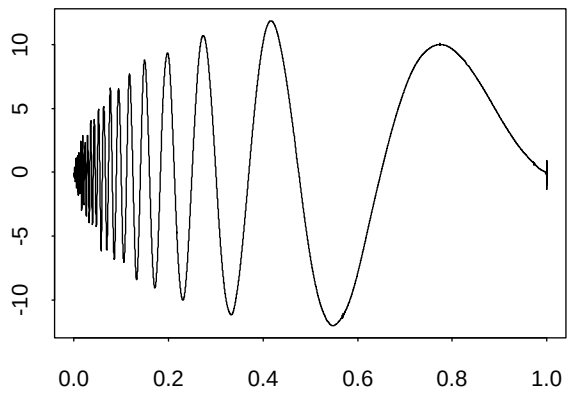


heavisine loss/n= 0.0239

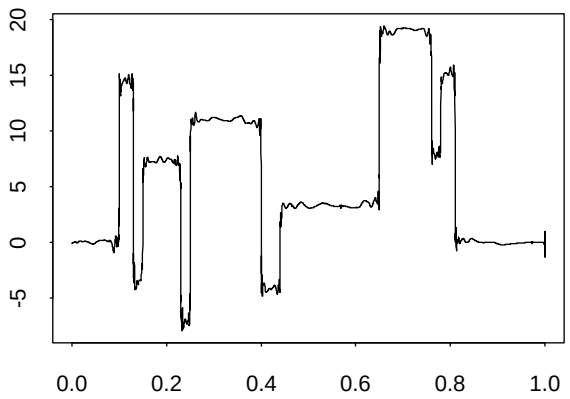


Bernoulli noise, coefficient dependent thresholds , n= 8192

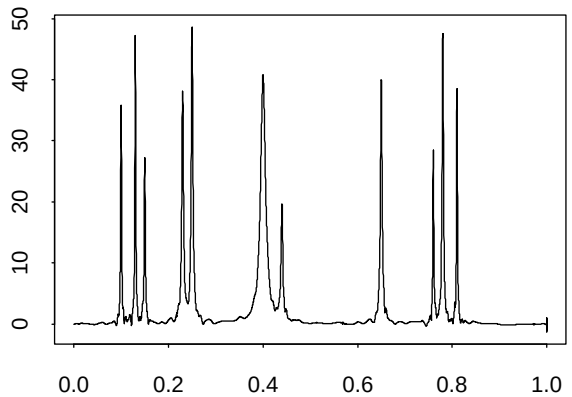
doppler loss/n= 0.0403



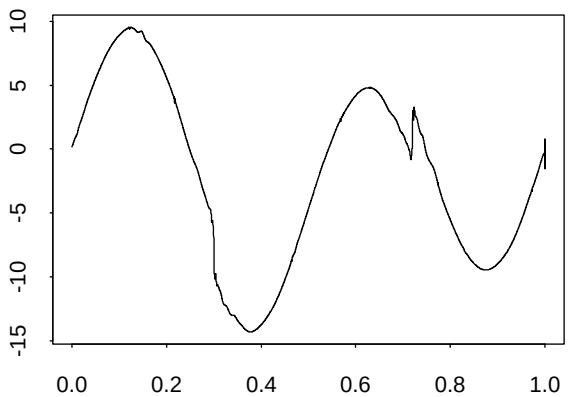
blocks loss/n= 0.18



bumps loss/n= 0.161

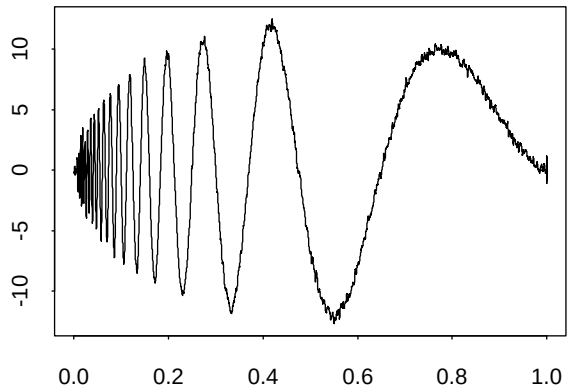


heavisine loss/n= 0.0254

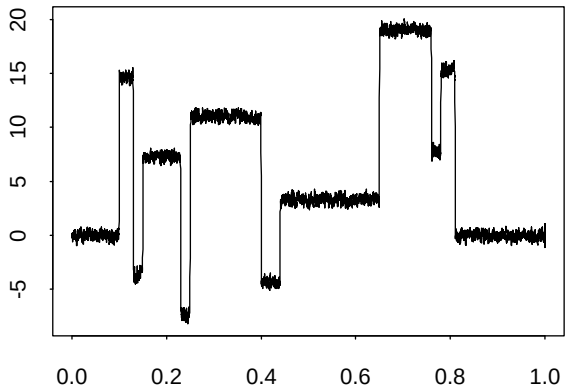


Bernoulli noise, James-Stein , n= 8192

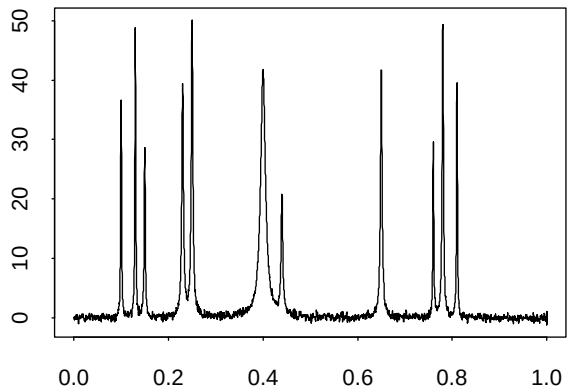
doppler loss/n= 0.0749



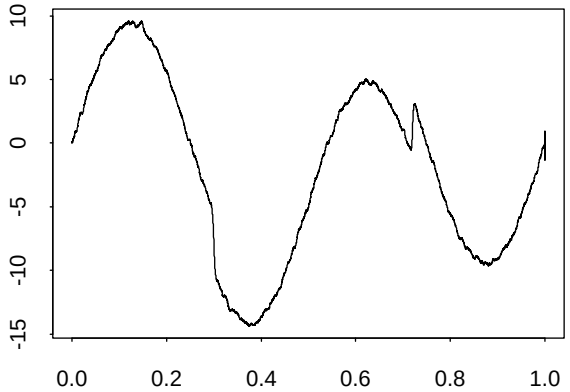
blocks loss/n= 0.257



bumps loss/n= 0.135

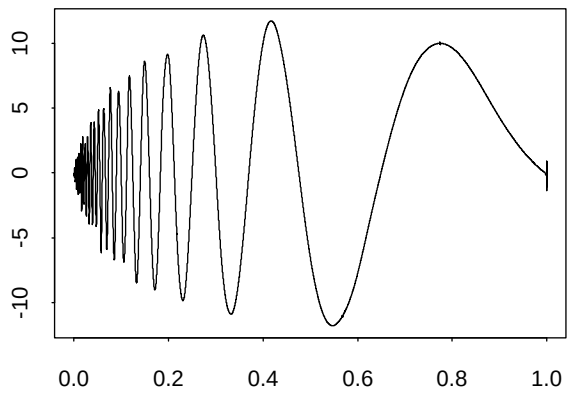


heavisine loss/n= 0.0397

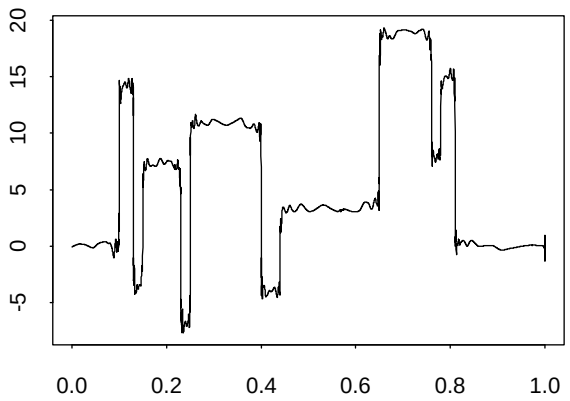


Bernoulli noise variance 1, threshold optimal gaussian , n= 8192

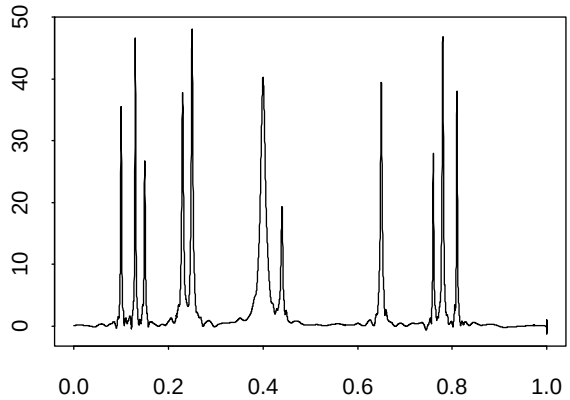
doppler loss/n= 0.0738



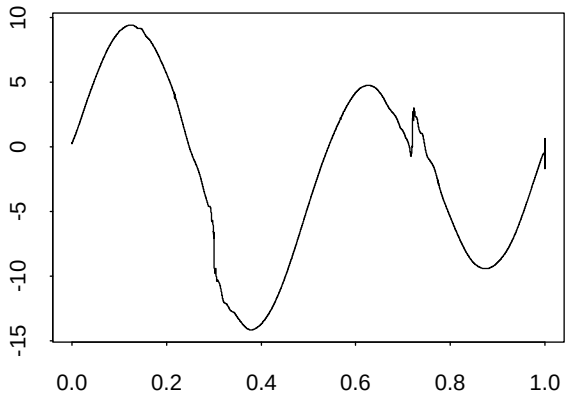
blocks loss/n= 0.246



bumps loss/n= 0.242

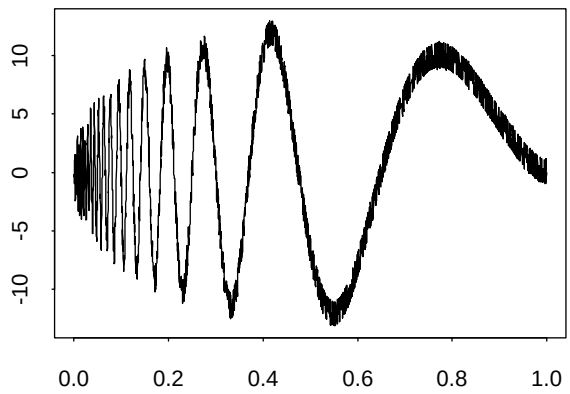


heavisine loss/n= 0.0487

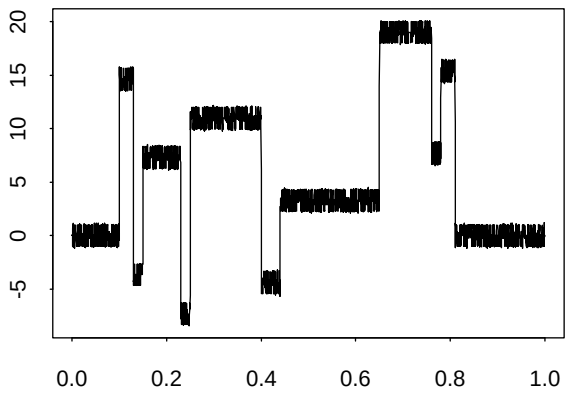


Bernoulli noise variance 1, median filter , n= 8192

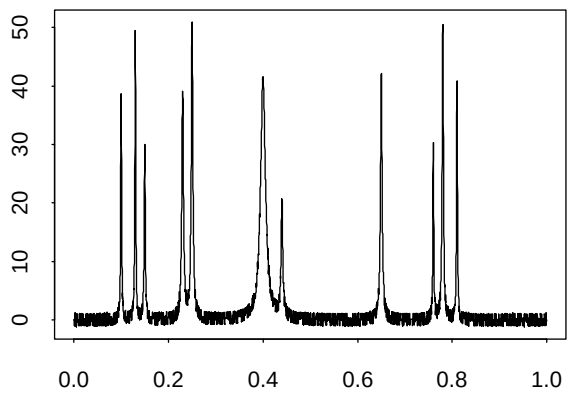
doppler loss/n= 0.477



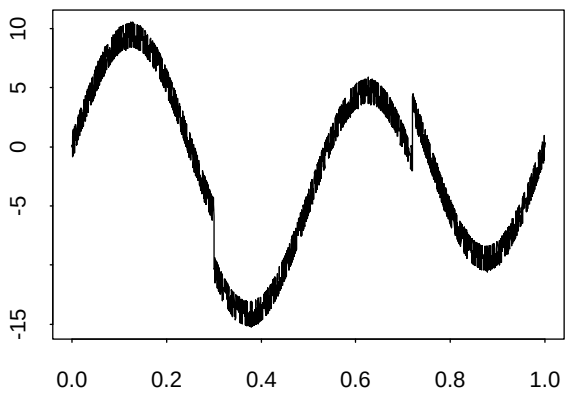
blocks loss/n= 0.535

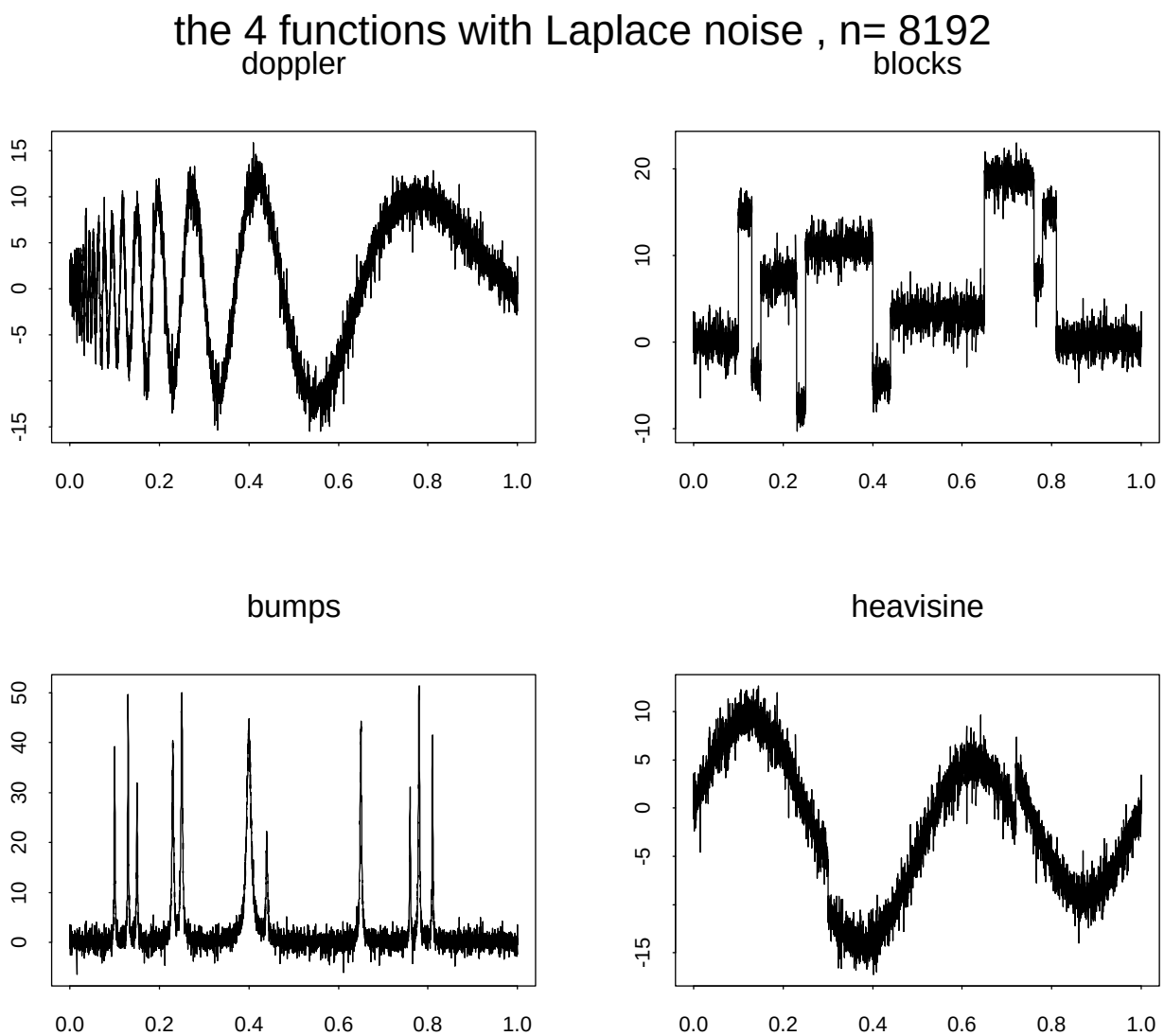


bumps loss/n= 0.469



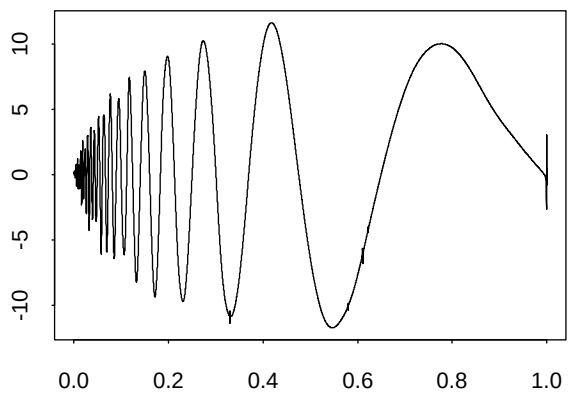
heavisine loss/n= 0.476



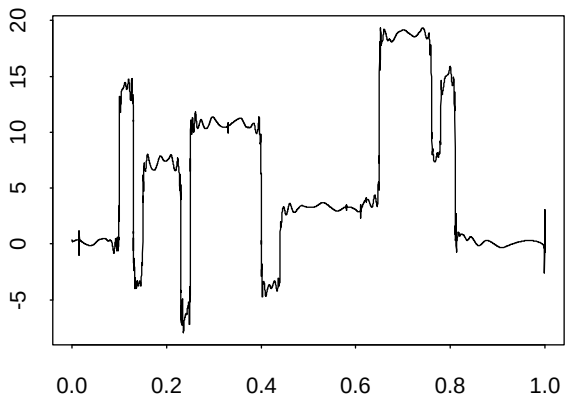

the 4 functions with Laplace noise , n= 8192
doppler
blocks
bumps
heavisine
-15
-5
0
5
10
15
-10
0
10
20
0
10
20
30
40
50
0.0
0.2
0.4
0.6
0.8
1.0

Laplace noise, thresholds sqrt(2 log n) , n= 8192

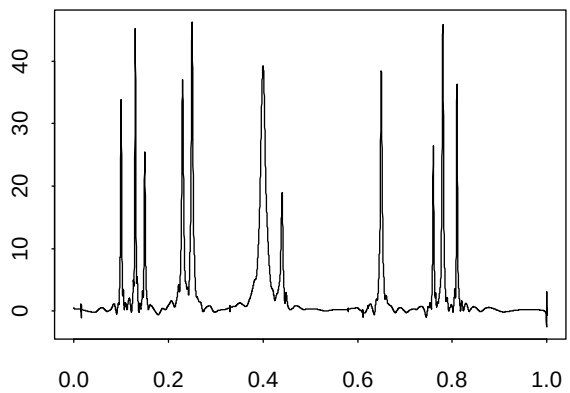
doppler loss/n= 0.156



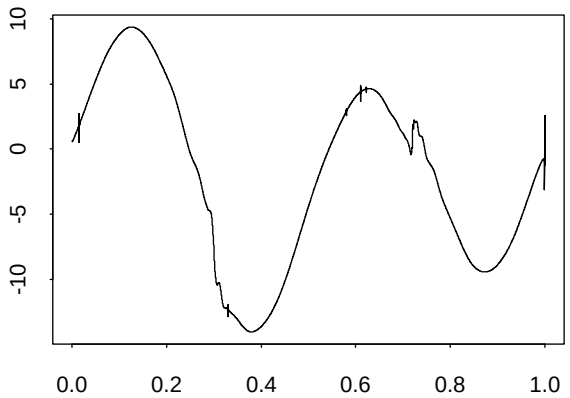
blocks loss/n= 0.476



bumps loss/n= 0.496

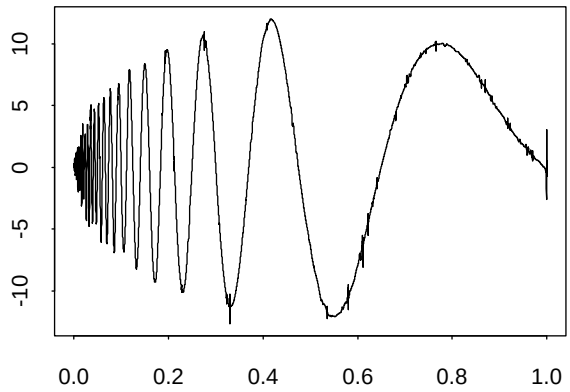


heavisine loss/n= 0.0966

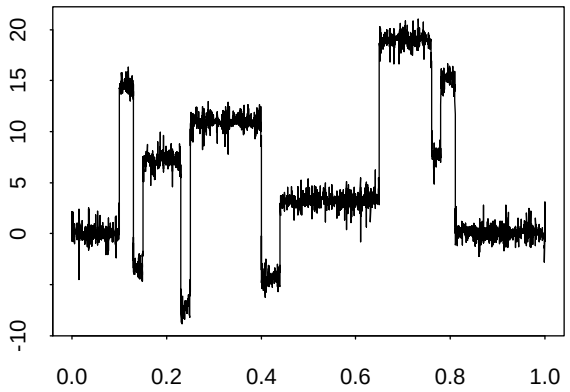


Laplace noise variance 1, sure shrink , n= 8192

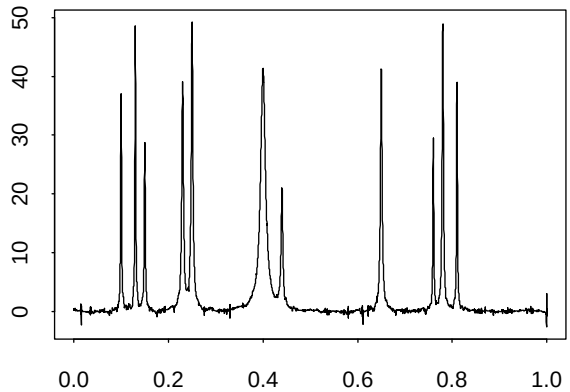
doppler loss/n= 0.0396



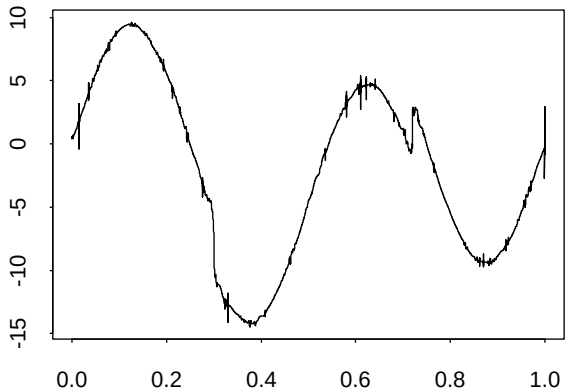
blocks loss/n= 0.24



bumps loss/n= 0.0902

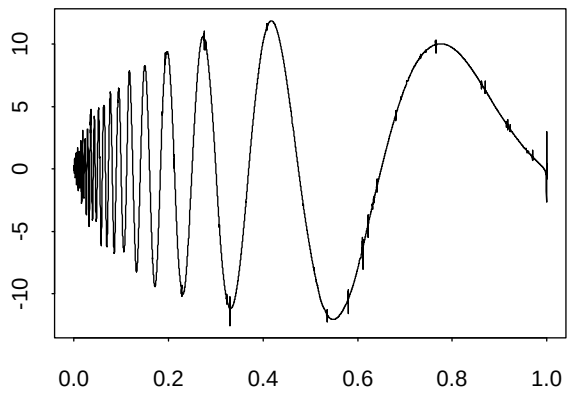


heavisine loss/n= 0.0324

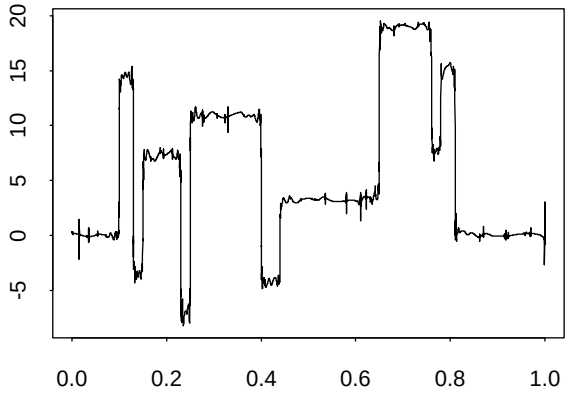


Laplace noise, coefficient dependent thresholds , n= 8192

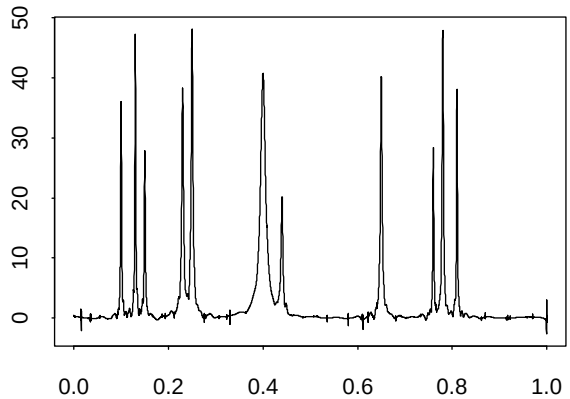
doppler loss/n= 0.0513



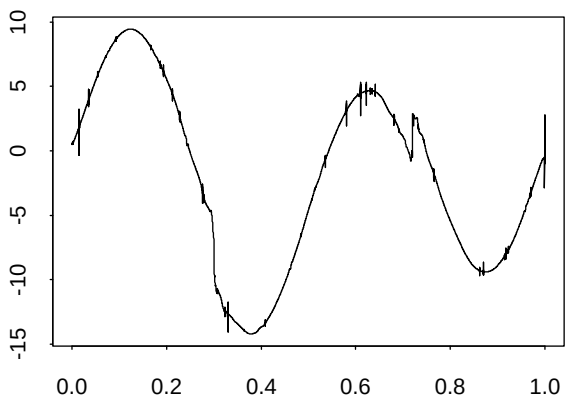
blocks loss/n= 0.182



bumps loss/n= 0.17

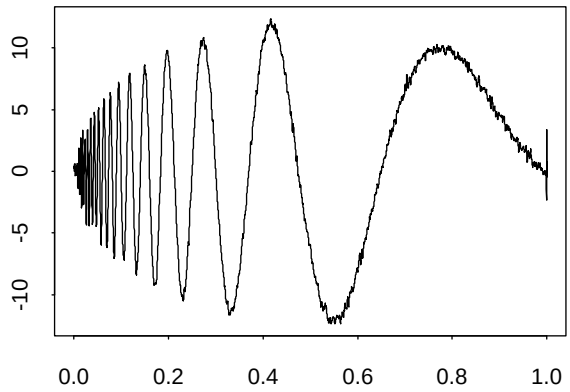


heavisine loss/n= 0.0325

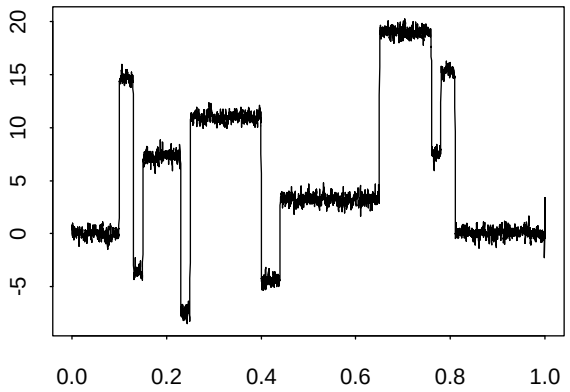


Laplace noise, James-Stein , n= 8192

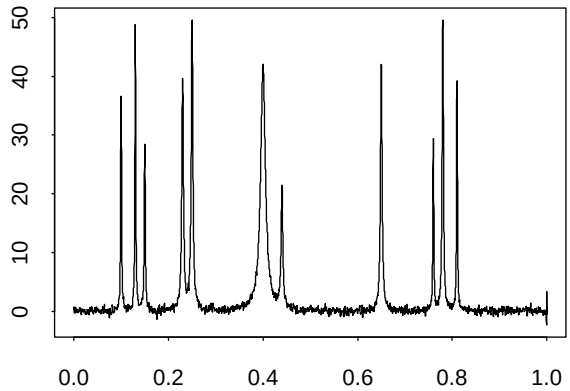
doppler loss/n= 0.075



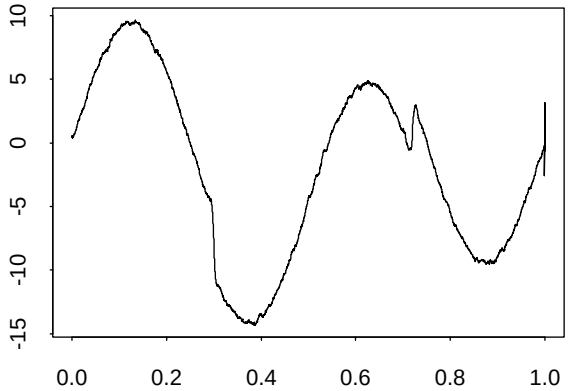
blocks loss/n= 0.261



bumps loss/n= 0.139

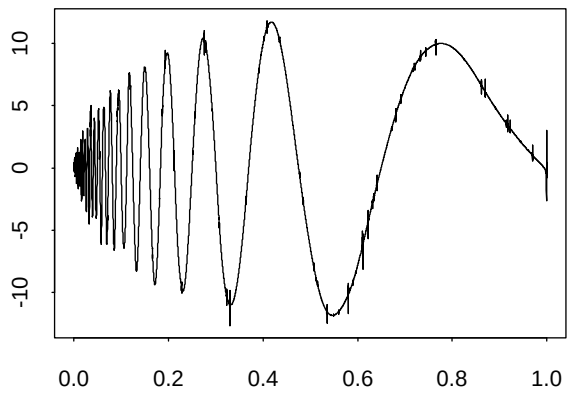


heavisine loss/n= 0.0413

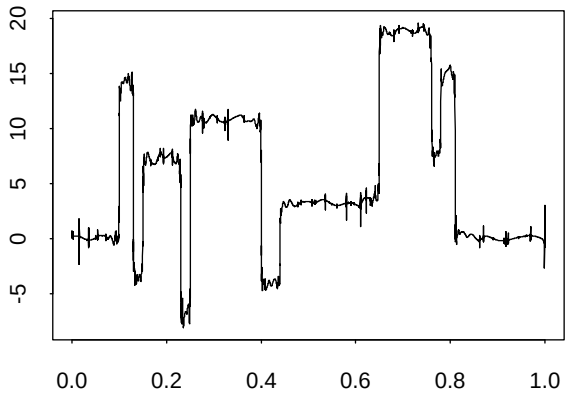


Laplace noise variance 1, threshold optimal gaussian , n= 8192

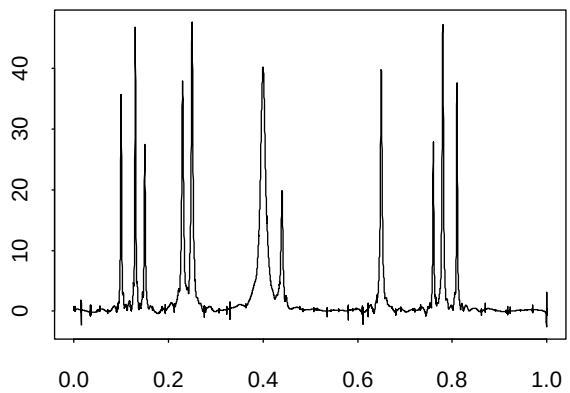
doppler loss/n= 0.084



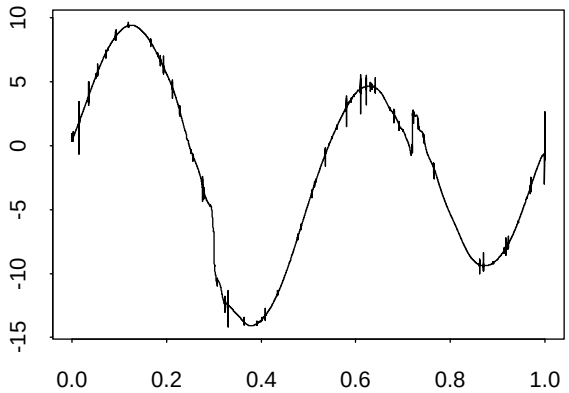
blocks loss/n= 0.252



bumps loss/n= 0.256

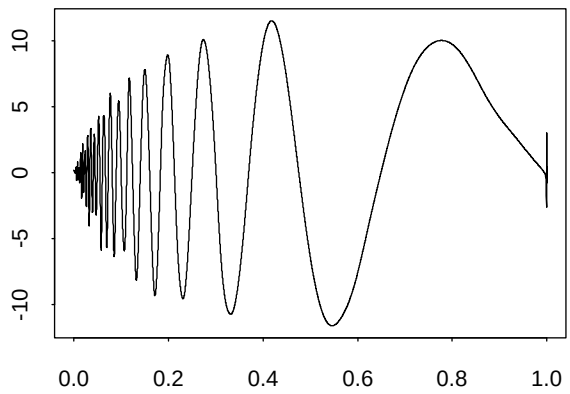


heavisine loss/n= 0.0605

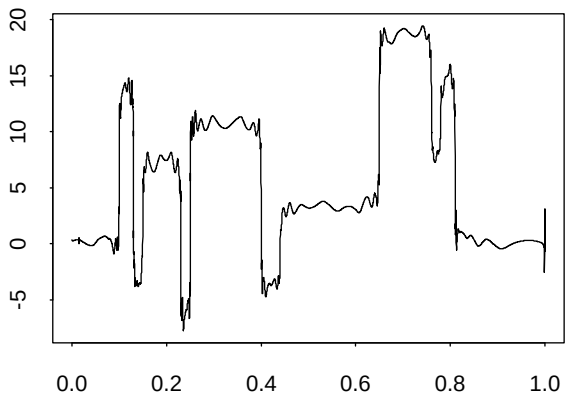


Laplace noise variance 1, threshold optimal lapace , n= 8192

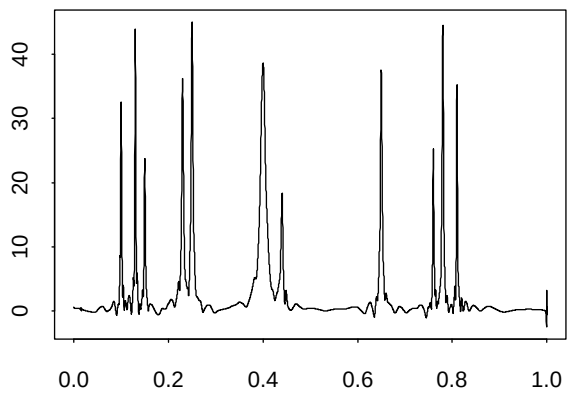
doppler loss/n= 0.244



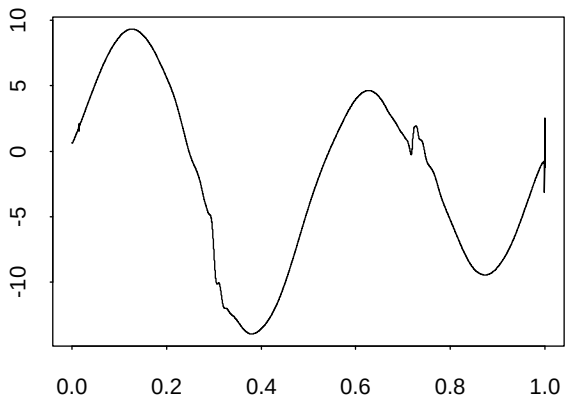
blocks loss/n= 0.716



bumps loss/n= 0.764

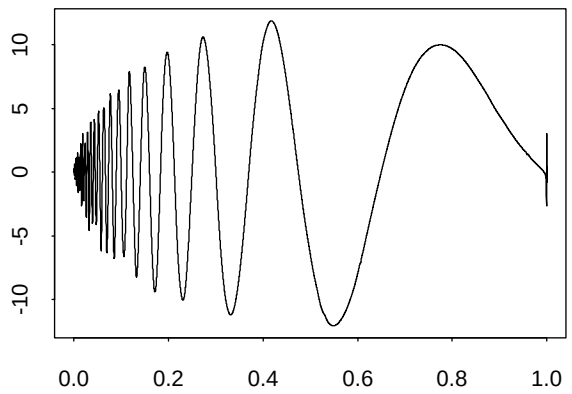


heavisine loss/n= 0.136

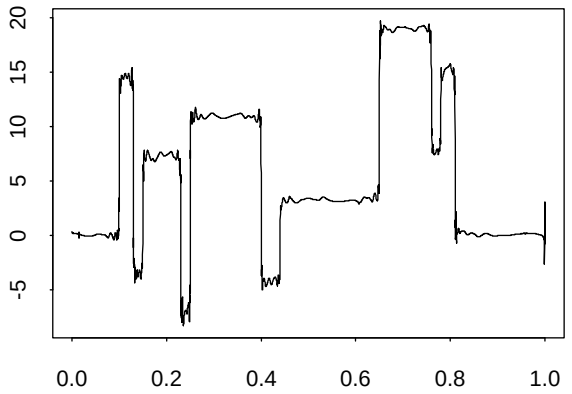


Laplace noise variance 1, c. d. t. optimal lapace , n= 8192

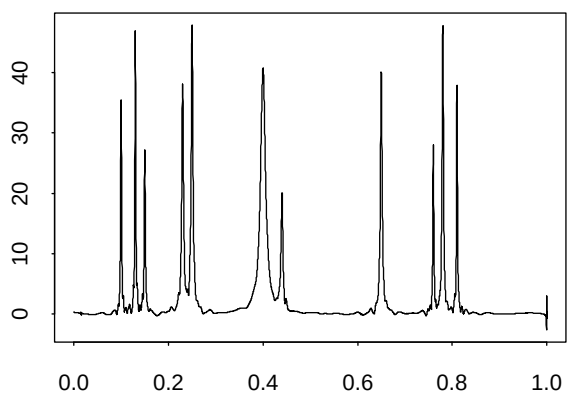
doppler loss/n= 0.0498



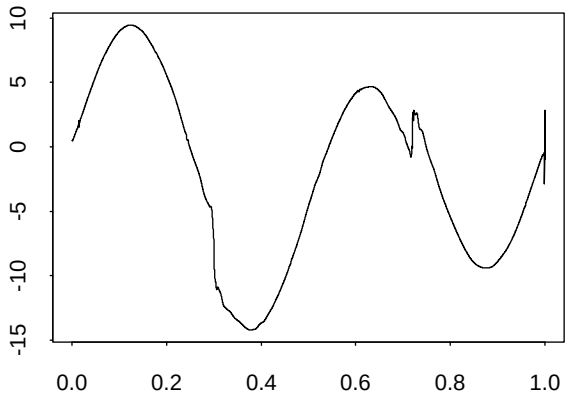
blocks loss/n= 0.232



bumps loss/n= 0.189

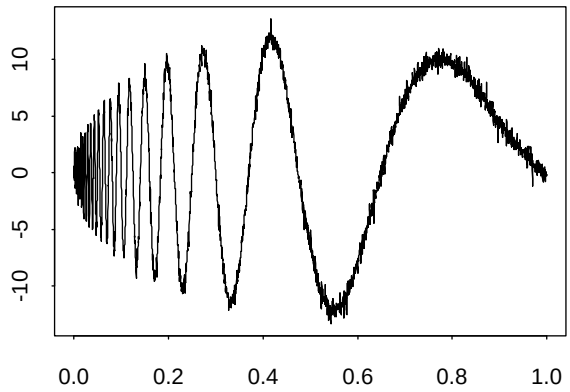


heavisine loss/n= 0.0283

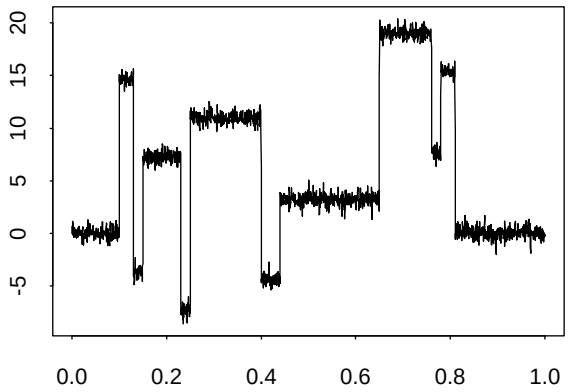


Laplace noise variance 1, median filter , n= 8192

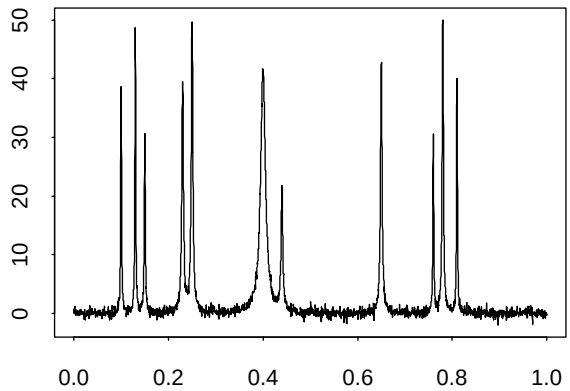
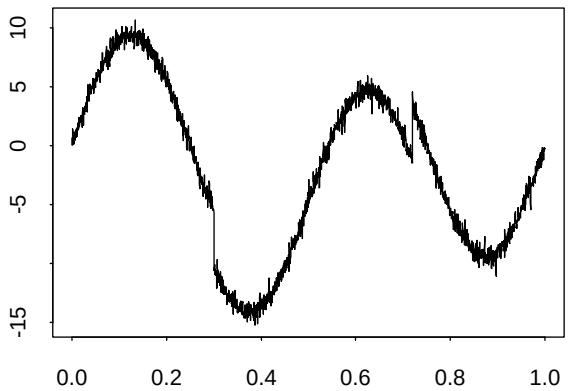
doppler loss/n= 0.164



blocks loss/n= 0.213



bumps loss/n= 0.166



heavisine loss/n= 0.16