Assignment - 4

ECN-619: Introduction To Compressed Sensing

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Course: MTech CNSP Yr-1

Q1: QCBP

After alpha = 0.99, the optimization problem is becoming feasible and CVX can solve the problem.

For values of alpha = 1 and close to 1, the estimate was not smooth for zero values of x, although the reconstruction of non-zero values of x were good.

As we increase alpha, zero values of x are being estimated smoothly but the solver struggles to estimate a very small non-zero value of x.

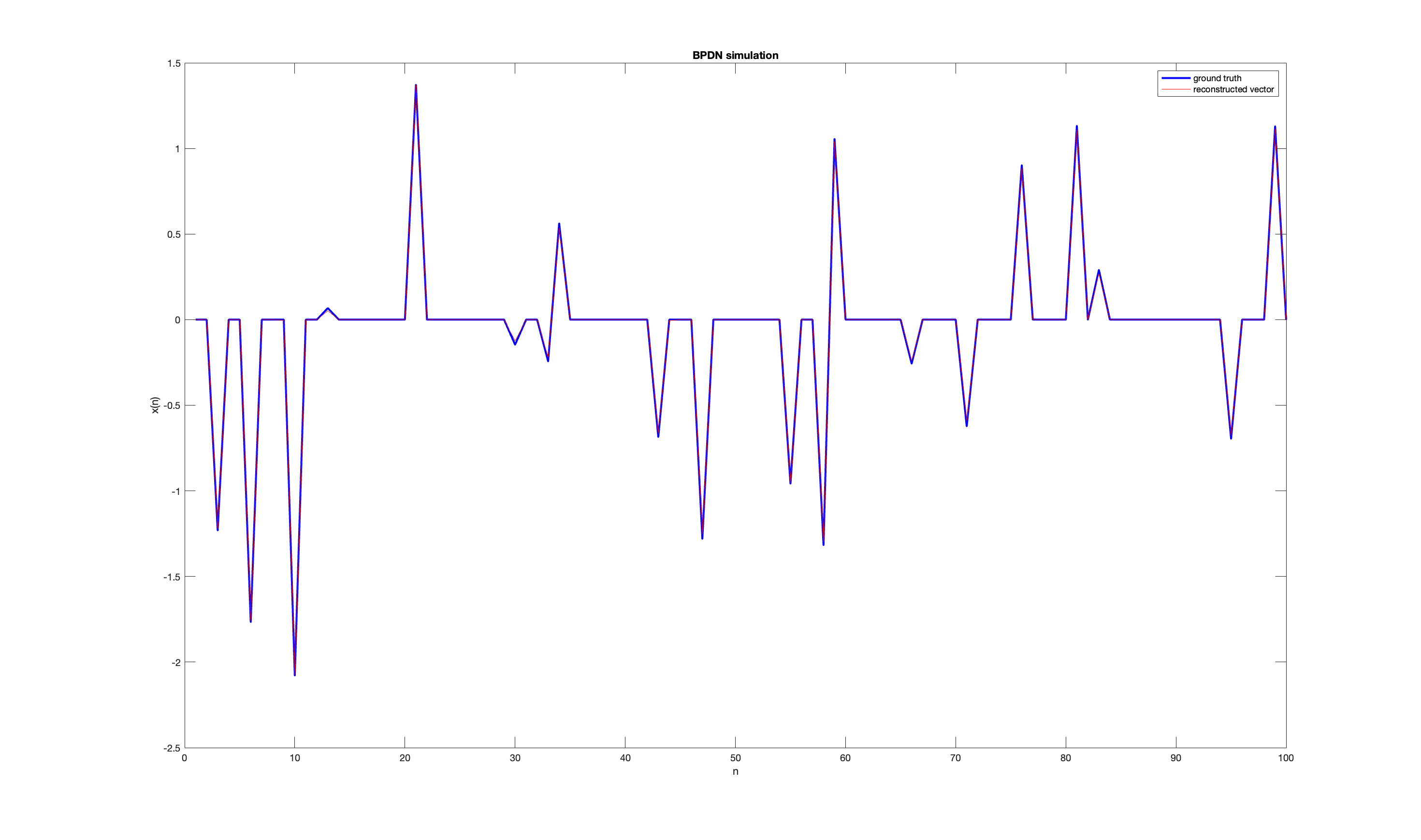
Found best reconstruction of x at alpha = 1.5

A graph of a graph

Description automatically generated

Q2: BPDN: Optimal regularization bias term = 4

Output:



Q3: LASSO optimization: Tau values near k value gives good estimate, Tau = 20

Output:

A graph with a purple line

Description automatically generated