Pulse Estimation

Problem 11.4

Contents

Setup

```matlab
clear;
for K = 2:10
    A = toeplitz([-1; 1; 1; zeros((K), 1)], [-1, zeros(1, K)]);
    A(1:3, 1) = [1; 1; 0];
    % A = A(1:end-1, :);
    A(end-2:end) = [0; -1; 1];
    % A
    m = inv(A' * A);
    disp(["For k = ", num2str(K)])
    m = m(end, :)
end
```

```
    "For k = "      "2"


  m =

    0.1250    0.2500    0.6250

    "For k = "      "3"


  m =

          0         0    0.2000    0.6000

    "For k = "      "4"


  m =

    0.0476    0.0952         0    0.2381    0.6190

    "For k = "      "5"


  m =

          0         0    0.0769         0    0.2308    0.6154

    "For k = "      "6"
```

```
m =

    0.0182    0.0364         0    0.0909         0    0.2364    0.6182

    "For k = "    "7"


m =

  Columns 1 through 7

         0         0    0.0294         0    0.0882         0    0.2353

  Column 8

    0.6176

    "For k = "    "8"


m =

  Columns 1 through 7

    0.0069    0.0139         0    0.0347         0    0.0903         0

  Columns 8 through 9

    0.2361    0.6181

    "For k = "    "9"


m =

  Columns 1 through 7

         0         0    0.0112         0    0.0337         0    0.0899

  Columns 8 through 10

         0    0.2360    0.6180

    "For k = "    "10"


m =

  Columns 1 through 7

    0.0027    0.0053         0    0.0133         0    0.0345         0

  Columns 8 through 11

    0.0902         0    0.2361    0.6180
```