

ELL720: Advanced Digital Signal Processing

Assignment 1

Grading Guidelines

2nd February 2018

Range and Velocity Estimation of a Moving Target

Maximum points: 100

- Range and axial velocity profile estimation using **correlation processing** and **end-point detection**.
For each algorithm, the following should be provided:
 - Brief algorithm description (**10 points**)
 - Matlab code with comments, including code for adding noise based on assumed SNR (**20 points**)
 - Results with well-labelled illustrations for the given (clean) data (**20 points**)
 - Results in a noisy environment, design of de-noising filter, and effect of pre-filtering (**30 points**)
 - Discussion comparing the two echo detection methods (**20 points**)