**EC4910 : Computer Project 5**

In this project we address the problem of estimating channel parameters from a pair of transmitted and received data. In this way we can see the channel characteristics in terms of time and frequency spread and then compute both Frequency Coherence and Time Coherence for this particular channel.

**Problem**. The model *proj5\_model.mdl* is a Simulink model you need to run in order to generate the data. This will give you 1.2 seconds of transmitted data (x) and received data (y), both stored as vectors in the Matlab workspace.

All the parameters (data rate, sampling frequency, channel parameters …) are contained in the callback “Initial” (from File>Model Properties> Callbacks in the model menu). Notice the time delays for each path, the power attenuations and the overall Doppler shift.

Assume an upper bound of the Doppler shift as  and plot the spread in time and frequency of the channel, based on what we covered in class. Also compute both Frequency and Time Coherence of the channel.

In order to make it easier to set up the problem, please use the matlab program *proj5.m* and complete with your own code.

Included:

*proj5.mdl* to generate transmitted and received data

*proj5.m* as template for the matlab program

*proj5\_m.pdf* class note on the project