This folder contains programs for alignment of 1D functional data. The data input to the program has two parts:

1. t: which is an mx1 vector of time points on which the data is sampled, and
2. f: which is an mxn matrix of n functions that are to be aligned.

The folder also contains a couple of simulated datasets for testing the programs.

**Instructions for running this code:**

**1. Type “mex DynamicProgrammingQ\_Adam.c” : this should generate a mex file. If this**

**gives an error, you need to install a C compiler on your computer.**

**2. Type “TestRun”. This should show a demo of the programs on a simulated**

**dataset.**

\*\*An important requirement for running this program is to have a mex file for running a

function called DynamicProgrammingQ\_A.c. Without this step, the programs will not work.

The material for this code is described in the paper:

1. *Registration of Functional Data Using Fisher-Rao Metric*, by A. Srivastava, W. Wu, S. Kurtek, E. Klassen, and J. S. Marron, [arXiv:1103.3817v2](http://arxiv.org/abs/1103.3817v2), 2011.
2. *Functional and Shape Data Analysis,* Srivastava and Klassen, Springer Series in Statistics, 2016.

Any use of this code in future publications should be acknowledged by citing these papers.