**CODE AND DATA FOR THE PAPER**

**“Regression Models on Riemannian Symmetric Spaces”**

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This is a ReadMe document for running the data analysis presented in the paper.

* Platform: The implementation was done in MATLAB.
* The folder ADNI\_RMRSS.zip contains the code and data.
* Upon unzipping a folder ADNI\_RMRSS will be created.
* Data is in ADNI\_RMRSS\data.
* Code is in ADNI\_RMRSS\code.
* DATA: There are eight data files in the folder ADNI\_RMRSS\data.
  + ADinfoF.mat - demographic info for female AD subjects;
  + ADinfoM.mat - demographic info for male AD subjects;
  + NCinfoF.mat - demographic info for female normal healthy subjects;
  + NCinfoM.mat - demographic info for male normal healthy subjects;
  + ADLdataF.mat - CC contour data for female AD subjects;
  + ADLdataM.mat - CC contour data for male AD subjects;
  + NCLdataF.mat - CC contour data for female normal healthy subjects;
  + NCLdataM.mat - CC contour data for male normal healthy subject
* DATA SET-UP
  + In the file \ADNI\_RMRSS\code f001\_setData.m, the appropriate path for data should be set up.
* RUNNING THE CODE:
  + The work directory should be set up to ADNI\_RMRSS\code.
  + The following five main MATLAB programs should be run in the specified order:
    - f001\_setData.m
    - f002\_mainStage1.m
    - f003CF\_covMatStage1.m
    - f004\_seetMask\_and\_Kernel.m
    - f005CF\_St2\_plots\_varcovMatE02.m
* RESULTS:
  + Partial results are saved several times throughout the running process.
  + The final results and plots are produced by f005CF\_St2\_plots\_varcovMatE02.m
* NOTE: All the other MATLAB files in the ADNI\_RMRSS\code are implemented functions used for in the main programs.