**README: Lorenz 96**

This Readme file contains information about how to replicate the experiments for the Lorenz 96 system.

The folder *Lorenz\_96*  contains the following files:

* Lorenz\_prediction.py: Trains GPLSTM to make predictions and saves results
* Lorenz96\_read\_results.py: Plots the results obtained by Lorenz\_prediction (Fig 4.10)
* L96\_propagation.py: Propagates one step ahead predictions by training and predicting all 20 dimensions in parallel using MPI and saves Results for the most energetic mode.
* prop\_read\_results.py: Plots the Results saved by L96\_propagation.py (Fig 4.11)
* Data/0\_data\_generation.py: Generates Lorenz 96 data by specifying forcing regime F
* Data/lorenz96\_SVD.py: Performs Singular Value Decomposition of the Lorenz 96 states generated by 0\_data\_generation.py

*1.Lorenz 96: Propagating one step ahead predictions (Chapter 4.4.2)*

Run **L96\_propagation.py** by specifying n\_steps and n\_samples and the forcing regime F. The results are saved and can be read by running **prop\_read\_results.py.** This generates the plots Fig 4.11.

*1.Lorenz 96: Comparison between n-step ahead predictions (Chapter 4.4.1)*

Run **Lorenz\_prediction.py** and specify the future shift n and the forcing regime F. This saves the results and they can be plotted by running **prop\_read\_results.py** by reading the corresponding results file. This generates the plots in Fig. 4.8.