Transfer Report

Keiran Suchak — 200888140

July 23, 2019

Contents

1 Introduction

- What am I doing?

- Why am I doing it?

- How have people done it in the past?

- How do I plan to do it?

2 Literature Review

- Introduction to agent-based modelling

- Review of methods for real-time model updating

  - Data assimilation
  - Others

3 Method

- Kalman Filter

- Ensemble Kalman Filter

- Model

- Experiments

  - Variation of observation noise
  - Variation of assimilation period
  - Variation of ensemble size
  - Providing aggregated data
  - Missing entrance/exit attributes and subsequent parameter estimation for these attributes

4 Results

5 Conclusion

A Code Documentation

B Derivation of Ensemble Kalman Filter