

Statistical Analysis Plan for Modelling biological systems with nonparametric models

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Primary Objective

- Comparing the performance of smoothed splines with more commonly used parametric models (e.g. linear regression models).
- Comparing the performance of smoothed splines with other nonparametric models such as RKHS.

Secondary Objectives

- Generate simulated data using different ODE models (e.g. SIR models) to compare the performance of different algorithms.

Data Collection methods

- Data can be generated by running the code in the R package KCode.
- Fitting different ordinary differential equations to obtain data for different models.

Variables under consideration

- **Primary outcome variable:** Calculate the root mean square error of the prediction and the true value

Numerical and graphical summaries to be presented

Models to be fitted