

# Notes on Gaussian Process Regression

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## Preface

*Gaussian Process Regression* (GPR)

This document is still in preparation.

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## 1 Introduction

## 2 Covariance matrix

## 3 Covariance kernels

Squared exponential kernel:

$$K(x_i, x_j) = h^2 \exp\left(\frac{-(x_i - x_j)^2}{\lambda^2}\right) \quad (1)$$

## 4 Building your GPR in Python

## References

- [1] C. E. Rasmussen, C. Williams, *Gaussian Process for Machine Learning*, 2006
- [2] S. Roberts, M. Osborne, M. Ebdon, S. Reece, N. Gibson, S. Aigrain *Gaussian Processes for Timeseries Modelling*, 2012
- [3] A. Scaife, *Machine Learning: Gaussian Process Modelling in Python*, an online lecture