Bruxelles, November 2018

Notes on Gaussian Process Regression (GPR)

https://camillejr.github.io/science-docs/

1 Introduction

2 Covariance matrix

3 Covariance kernels

Squared exponential kernel:

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

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. Ebden, 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