

Calibration Profiles

eX Modelo school

OpenMOLE

June 25, 2019

Context

Reminder You get the best parameter set to minimise a given fitness function



Reminder You get the best parameter set to minimise a given fitness function



Problem You only get one parameter set!

Reminder You get the best parameter set to minimise a given fitness function



Problem You only get one parameter set!

→ What is happening in the rest of the input space?

How does a small variation of one of the parameters affect the model output?

Objective Find outputs with a good fitness (but not the best) in different zones of the input space

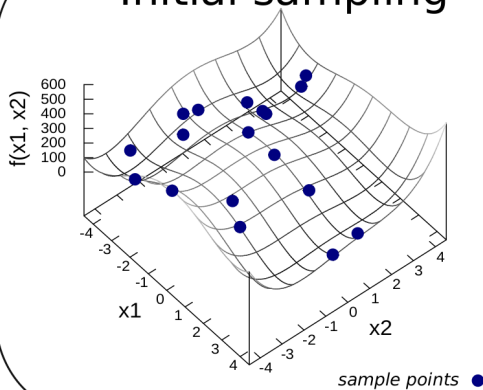
Method

Control the variations of one parameter x_1
and calibrate over the other parameters

→ **calibration profile of x_1**

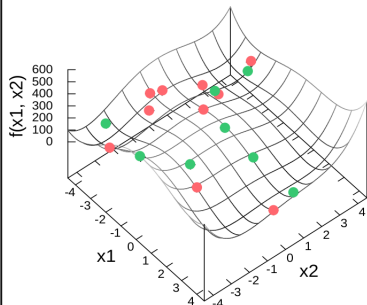
Initial sampling

1

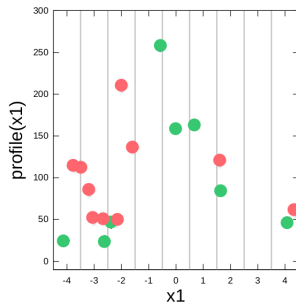


2

Elitism



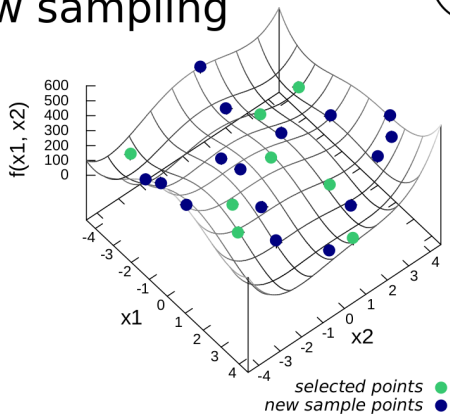
2D projection



selected points ●
excluded points ●

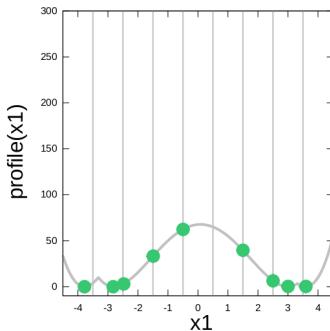
3

New sampling



4

Profile approximation



points of the profile
theoretical continuous profile



Interpretation

We know how x_1 variations influence our model's fitness

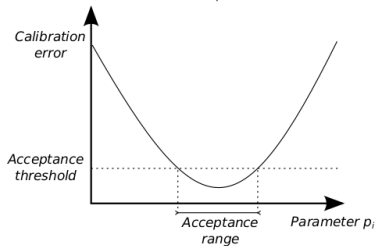
→ **solutions of an optimisation problem all along x_1 domain**

We know how x_1 variations influence our model's fitness

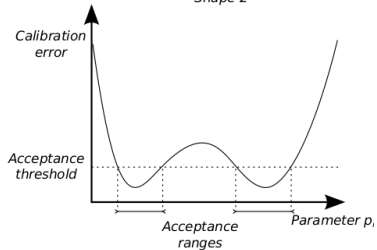
→ **solutions of an optimisation problem all along x_1 domain**

- ▶ Does the parameter impact the model's capacity to produce plausible outcomes?
- ▶ What is the variation interval of the parameter?
- ▶ Is the parameter useful to the model?

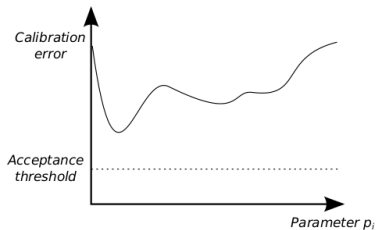
Shape 1



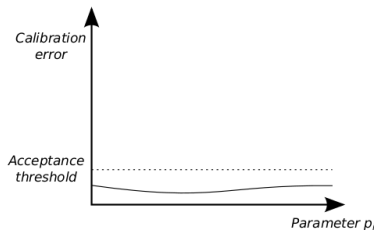
Shape 2



Shape 3



Shape 4



Profile in OpenMOLE

