Introduction

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library(akima)
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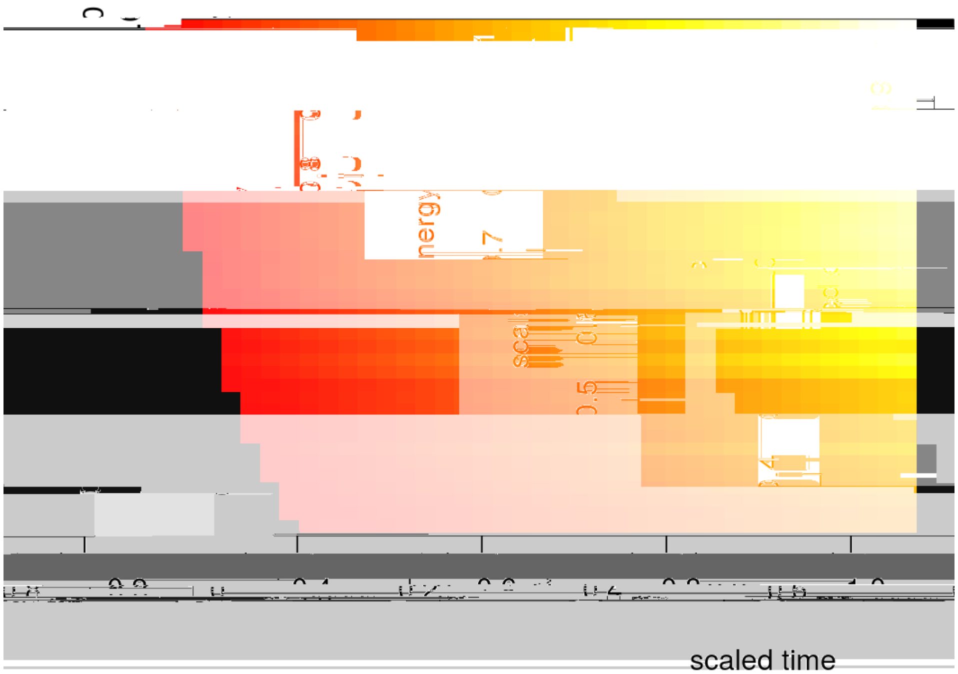

Computer model calibration

However, there is likely predictability left on the table.

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Big runs

Beating 1% on the whole input space will, for starters, require more runs.

A case study

Consider the 580-acre Lockwood Solvent Groundwater Plume Site, an EPA Superfund site located near Billings Montana.

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Objective improving comparator

It is interesting to ask …

- What makes the good methods good?
- Why do the bad methods (in some cases) fail so spectacularly?
- And by the way, how are statistics and RSMs involved?

Consider the following random search method that I call **objective improving candidates**.

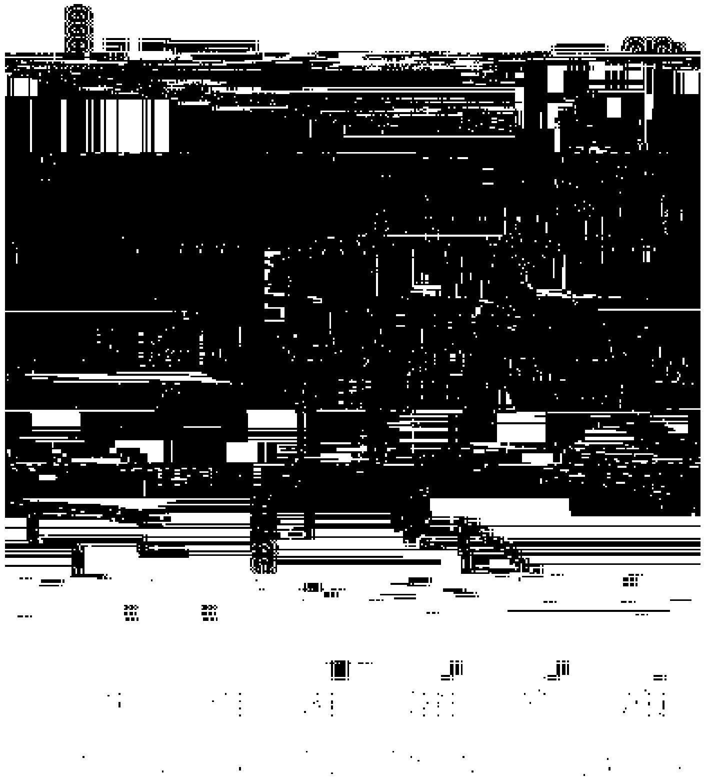
Given the current best valid input *, i.e.,

- $c(\quad ^*) \leq 0$, and
- $f(\quad) = \qquad < f$ for all other (tried so far) such that ,

draw uniformly from , for example via rejection.

Here I've extracted the first 500 iterations from Matott, et al., (2011),

- which are in `runlock/pato_results.csv` ,
- and added average progress (best valid value) from 30 repeated runs of OICs.



Sequential design

Half of the MATLAB/Python methods are not doing better (on average) than a slightly modified "random search".

- They are getting stuck in a local minima, and failing to explore other opportu [illegible]
- One popular appl [illegible] is called [illegible]
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