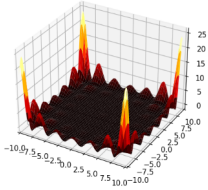


Choose objective function  $z = f(x)$ .

- |          |                      |                 |                  |                |                |                  |                  |
|----------|----------------------|-----------------|------------------|----------------|----------------|------------------|------------------|
| - Ackley | - Bukin6             | - Crosslegtable | - Giunta         | - Leon         | - Modschaffer2 | - Rosenbrock     | - Threehumpcamel |
| - Beale  | - <b>Carromtable</b> | - Crownedcross  | - Goldsteinprice | - Levi13       | - Modschaffer3 | - Schweffel      | - Zettl          |
| - Bird   | - Chichinadze        | - Cube          | - Griewank       | - Matyas       | - Modschaffer4 | - Sinenvsin      |                  |
| - Booth  | - Crossfunc          | - Easom         | - Himmelblau     | - McCormick    | - Penholder    | - Sixhumpcamel   |                  |
| - Bukin4 | - Crossinray         | - Eggholder     | - Holdertable    | - Modschaffer1 | - Rastrigin    | - Testtubeholder |                  |



Make random observations of  $f(x)$  using simulation with both random and systematic error.

There are  $n = 100$  simulated observations.

Random error is gaussian with  $\mu = 0$  and  $\sigma = 0.05$ .

Systematic error is gaussian with  $\mu = 2$  and  $\sigma = 0.05$ .

Fit a curve to our observations.

Conducted using linear interpolation.

Generate a weight distribution using some activation function on our generated curve.

Our activation function is simply the magnitude of our response.

Use weight distribution to make random observations of  $f(x)$  using direct experimentation with some random error.

There are  $m = 5$  experimental observations.

Random error is gaussian with  $\mu = 0$  and  $\sigma = 0.05$ .

Update model.

Gaussian process.

Fit a curve to our direct experimental observations.

Conducted using linear interpolation.

