

Illustrative example: quadratic local cost functions

Derivation of the algorithm - step 1 on 3

Simplified scalar scenario

$$f_i(x) = \frac{1}{2} a_i (x - b_i)^2 + c_i \quad a_i > 0$$

Corresponding solution

$$x^* = \frac{\sum_{i=1}^N a_i b_i}{\sum_{i=1}^N a_i} = \frac{\frac{1}{N} \sum_{i=1}^N a_i b_i}{\frac{1}{N} \sum_{i=1}^N a_i}$$

i.e. *parallel of 2 average consensi!*