

- **Step #2:** construct the **IDW exploration function**

$$z(x) = \frac{2}{\pi} \Delta F \tan^{-1} \left(\frac{1}{\sum_{i=1}^N w_i(x)} \right)$$

or 0 if $x \in \{x_1, \dots, x_N\}$

where $w_i(x) = \frac{e^{-\|x-x_i\|^2}}{\|x - x_i\|^2}$

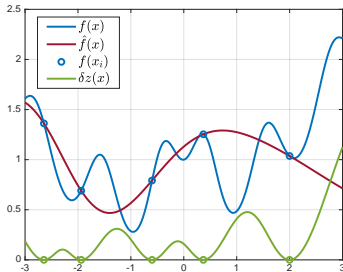
ΔF is the observed range of $f(x_i)$

- **Step #3:** optimize the **acquisition function**

$$x_{N+1} = \min_{\ell \leq x \leq u, g(x) \leq 0} f(x) - \delta z(x)$$

to get new sample x_{N+1}

- Iterate the procedure to get new samples $x_{N+2}, \dots, x_{N_{\max}}$



δ = exploitation vs
exploration tradeoff