

Research Update

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Total Potential Minimization

We have a set of points x_1, x_2, \dots, x_N

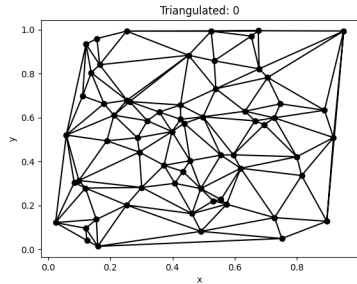
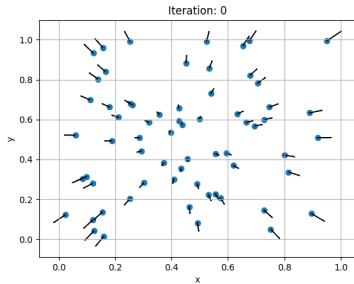
Using the Morse potential V as the pairwise potential we can calculate the total potential E .

$$V(x_i, x_j) = (1 - \exp(-a(r - r_e)))^2$$
$$E = \sum_{(i,j)} V(x_i, x_j)$$

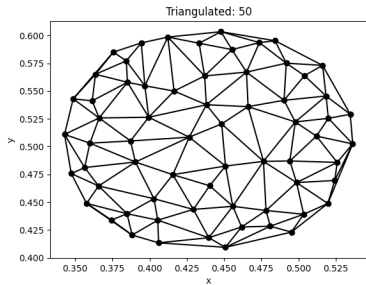
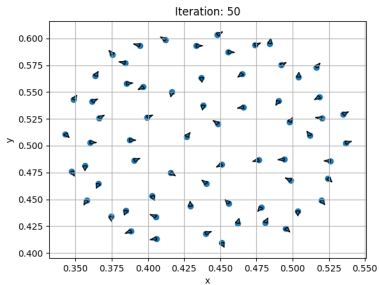
The Morse potential has a minimum at r_e

We set $a = 1/10$ and $r_e = 1/\sqrt{(N)}$

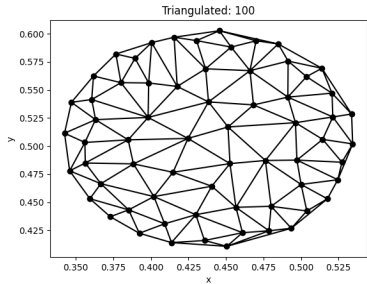
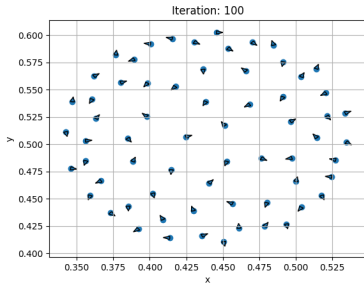
Total Potential Minimization



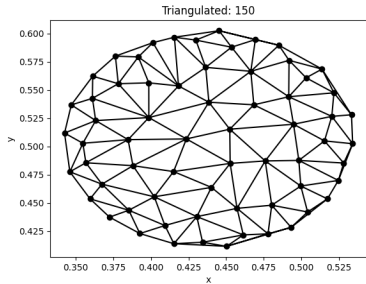
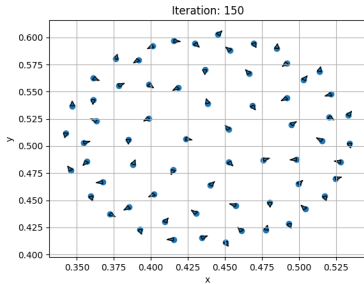
Total Potential Minimization



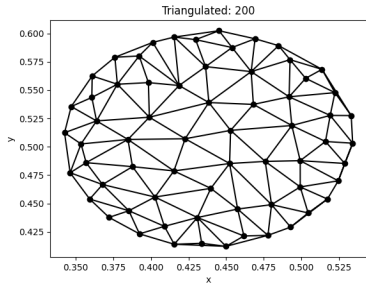
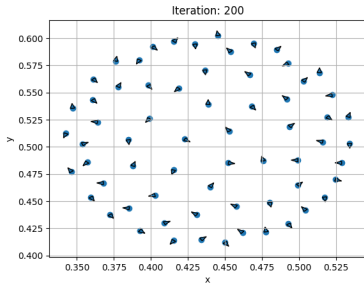
Total Potential Minimization



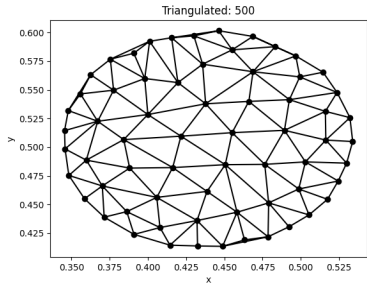
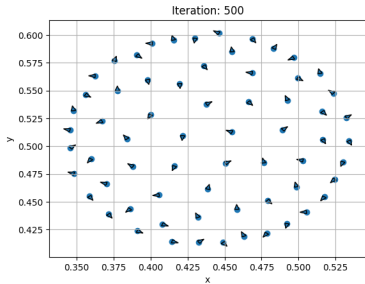
Total Potential Minimization



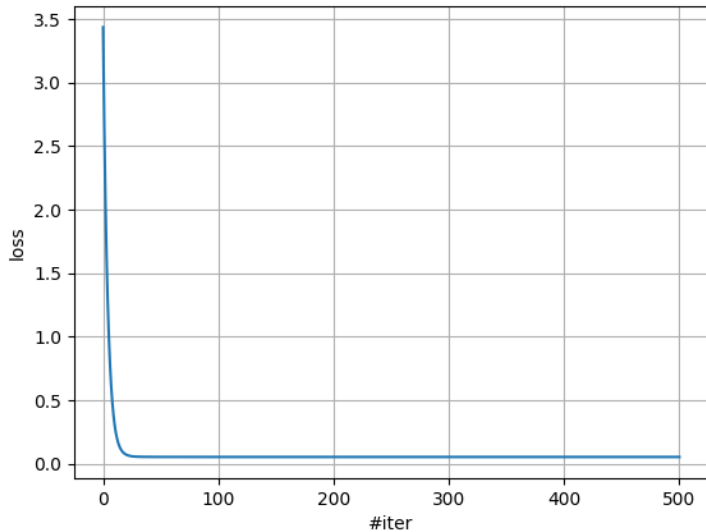
Total Potential Minimization



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