# Voronoi diagrams in different metrics

This report shows the support of displaying MathML content using the JEuclid open source project.
The content will be displayed using a JavaBean. The MathML XML content will be set as property "content". You can also set a formula for this property.

The pictures below show Voronoi diagrams in using different metrics.
Given n sites in the plane, the Voronoi diagram divides the plane into regions associated with each site, such that all points in a region are closest to the point associated with that region.
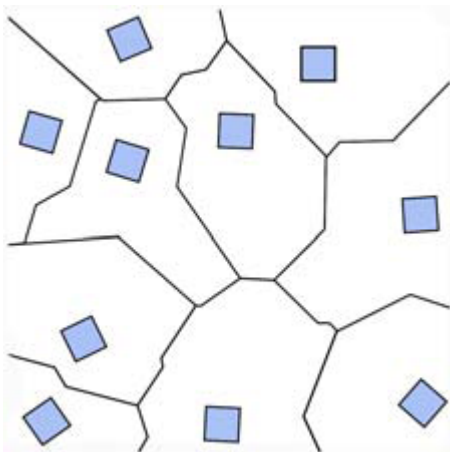A Voronoi diagram consists of cells associated with a single site, edges, equidistant to two sites, and vertices, equidistant to three sites. Since we assume general position, no four sites can be equidistant to a point in the plane, i.e., no four sites are co-circular.

$$VR_S(s) := \left\{ x \in \mathbb{R}^d : dist(x, s) \leq dist(x, q); \forall q \in S \right\}$$
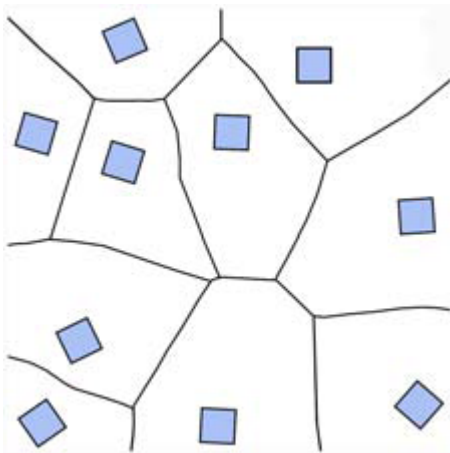
Euclid metric

$$d(x, y) = L_2(x, y) = |x - y| = \sqrt{\sum_{i=1}^{n} (x_i - y_i)^2}$$

Manhatten metric

$$d(x, y) = L_1(x, y) = \sum_{i=1}^{n} |x_i - y_i|$$