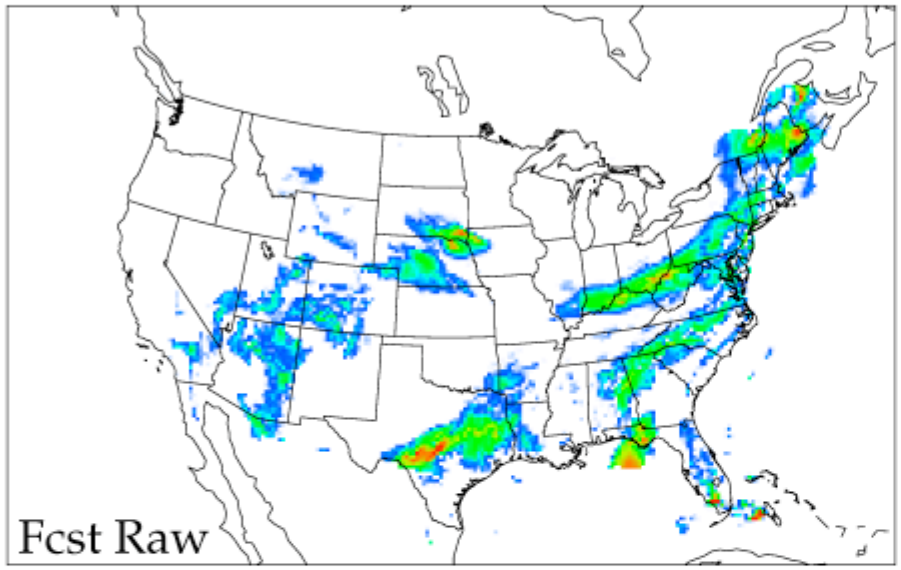
Matching & Merging

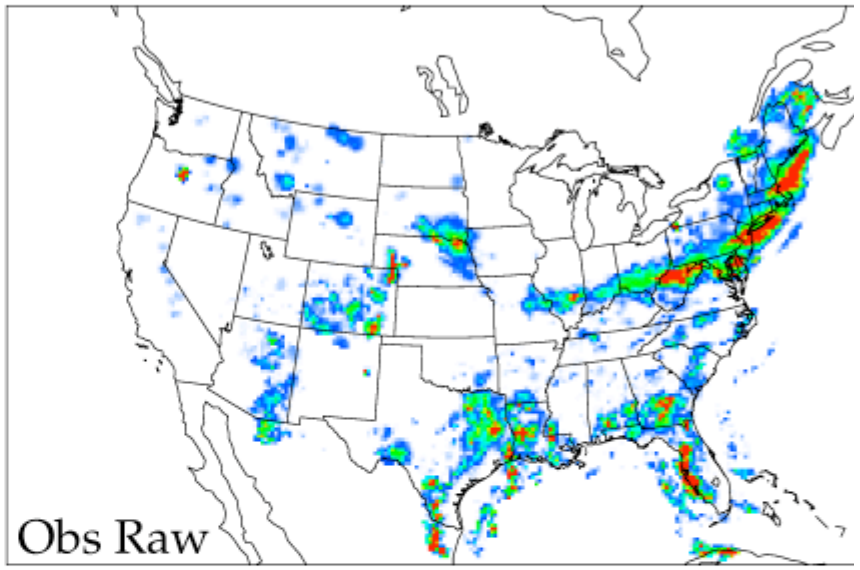
Merging: Associating objects in the same field.

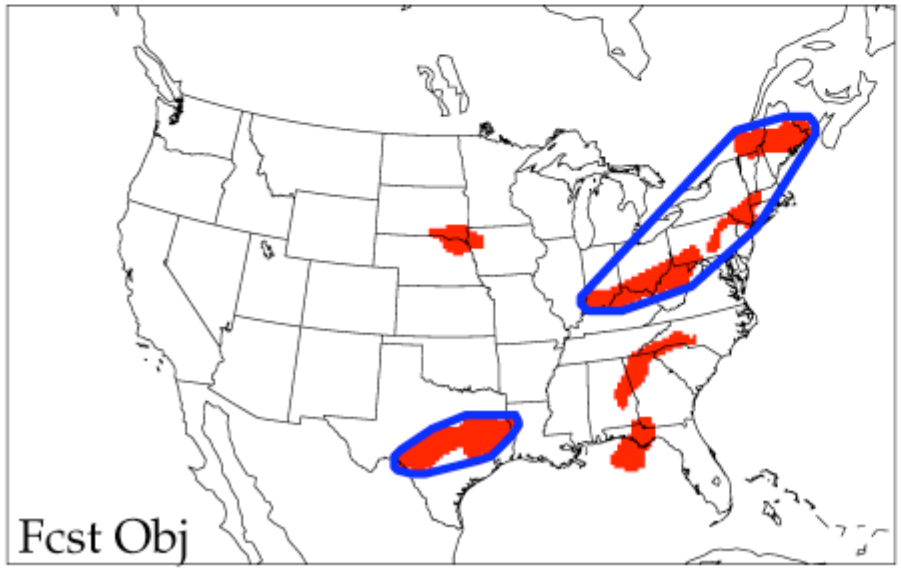
Matching: Associating objects in different fields.

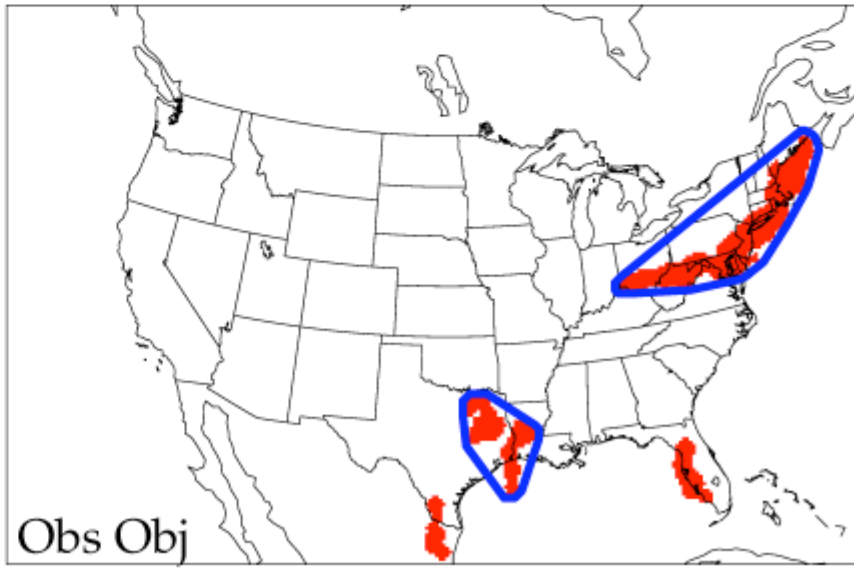
MODE does this using a Fuzzy-Logic engine

Example of Matching & Merging









Object Attributes

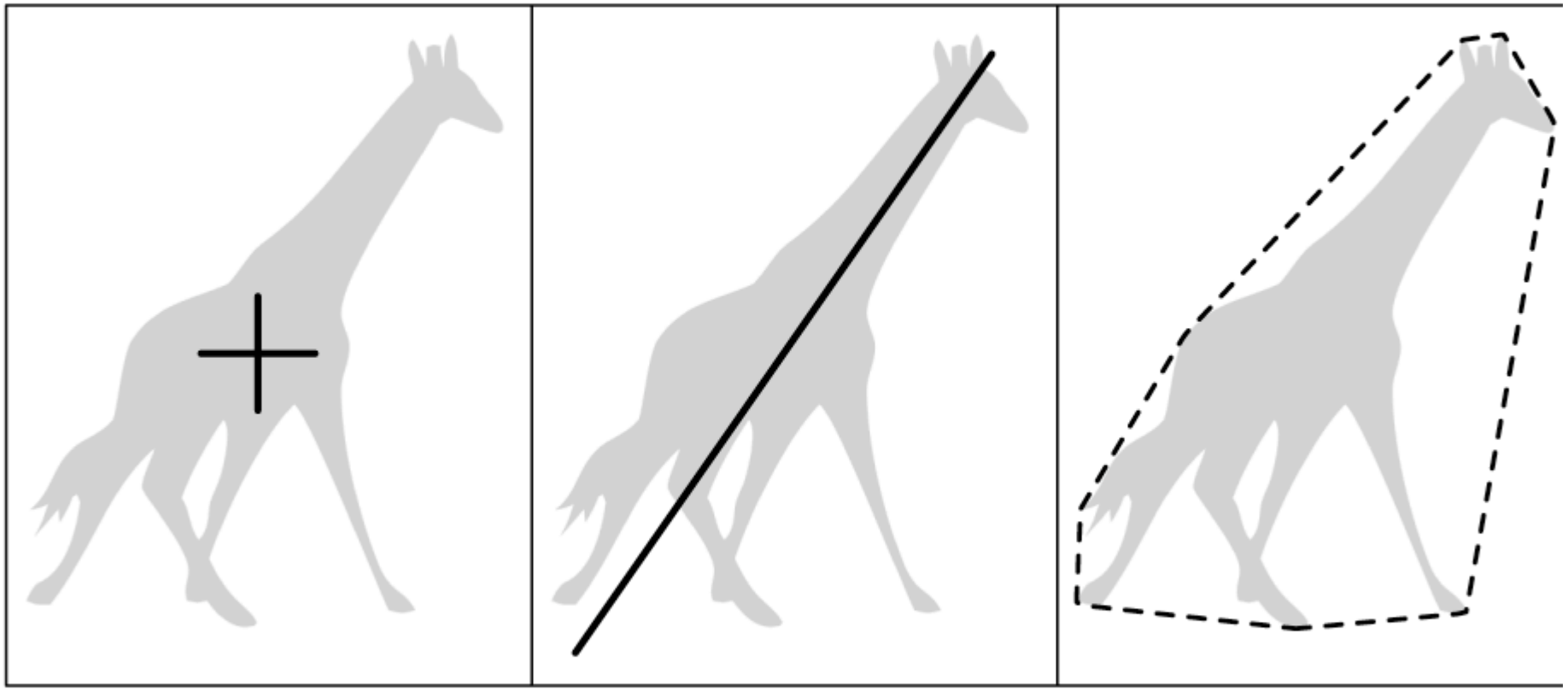
Single:

- Area
- Centroid
- Axis Angle
- Median Intensity
- Complexity
- Aspect Ratio
- Curvature

Pair:

- Centroid Distance
- Angle Difference
- Median Intensity Ratio
- Intersection Area
- Convex Hull Distance
- Boundary Distance
- Area Ratio

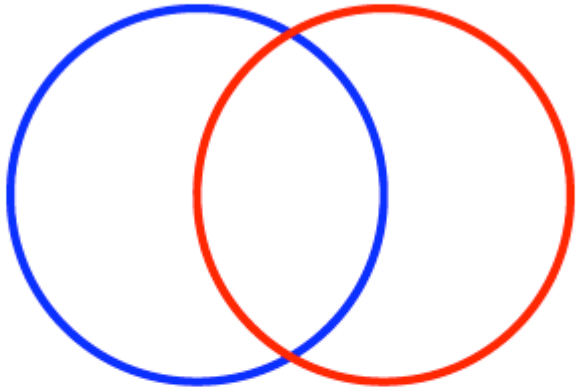
Example Single Attributes



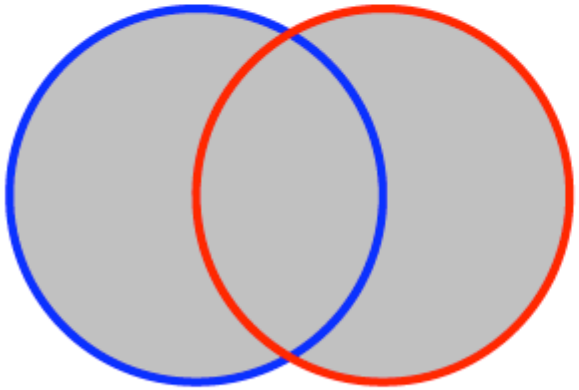
Centroid Axis Convex Hull

Example Pair Attributes

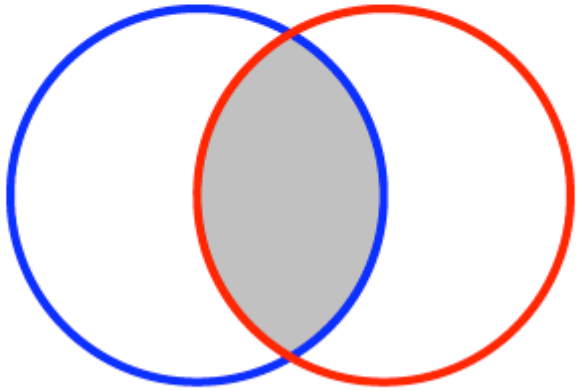
Forecast Object



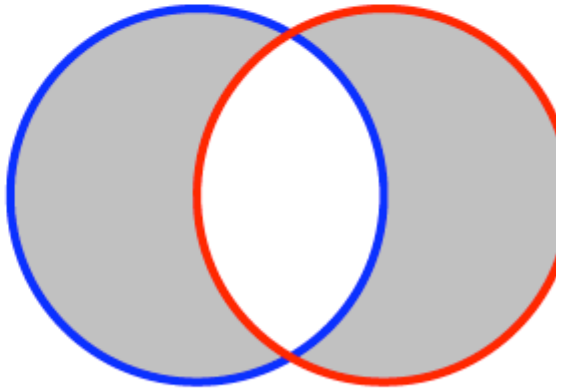
Observed Object



Union



Intersection

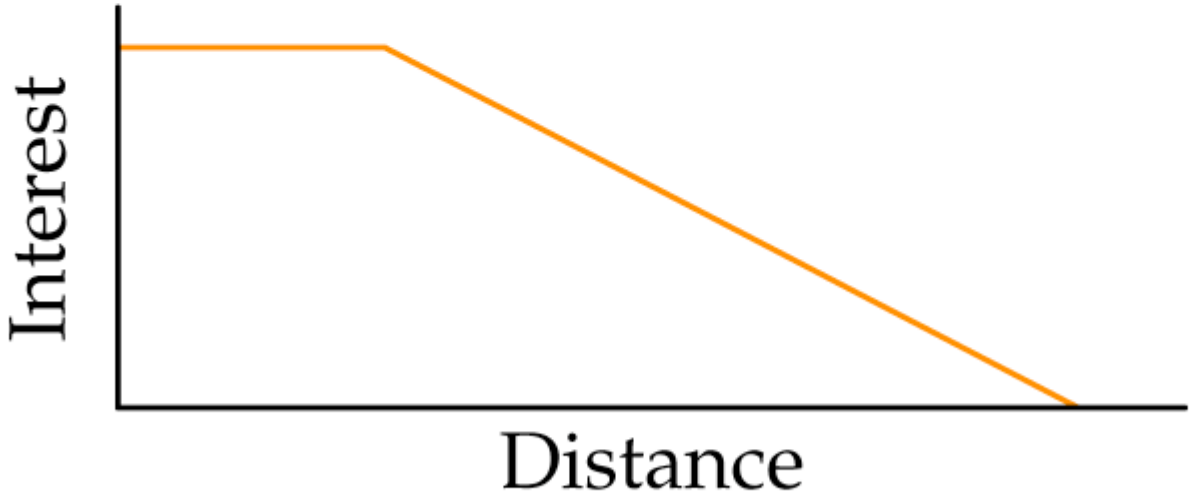


Symmetric Difference

Interest Maps

Map attributes to interest values.

Example: Centroid Distance



All interest maps can be changed in the config file.

Weights

Express relative importance of different attributes in matching and merging.

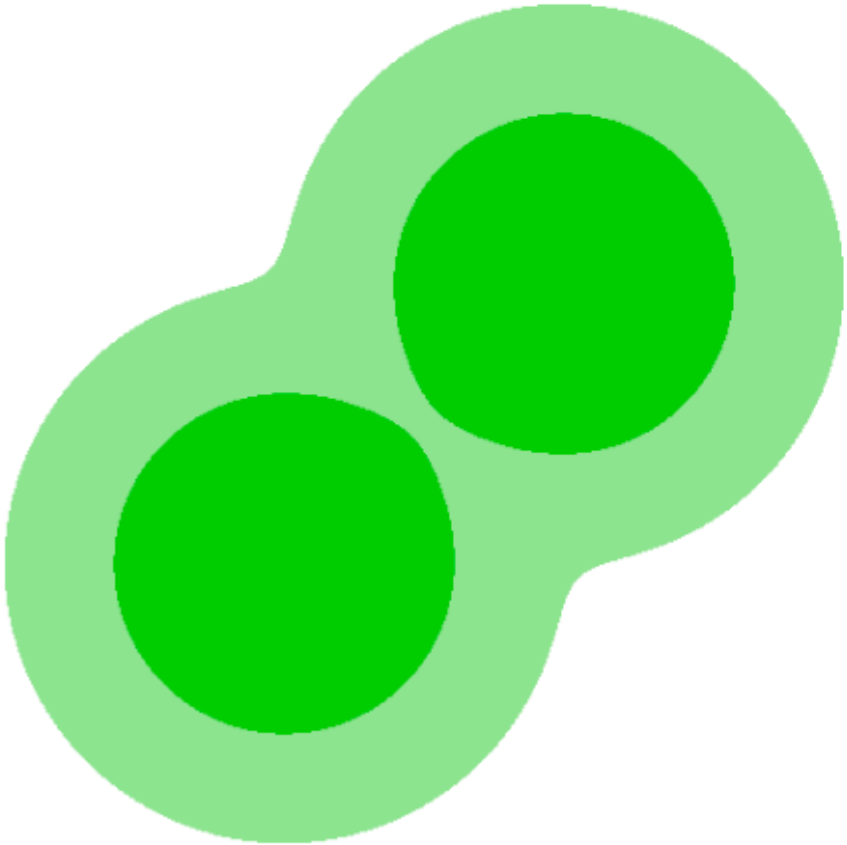
All weights can be changed in the config file.

Total Interest

Calculated from weights, attributes, and interest maps.

$$T(\alpha) = \frac{\sum_i w_i \, C_i(\alpha) \, I_i(\alpha)}{\sum_i w_i \, C_i(\alpha)}$$

Alternative Merging Method



Double Thresholding