CGraph documentation

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Abstract

1 sorting

2 list

3 set

4 graph

5 graph_metric

5.1 Constants

These constants are hard-coded to protect some numeric processes of hanging. They can be redefined during compilation, passing a flag such as `-DGRAPH_METRIC_TOLERANCE=1E-3`.

5.1.1 GRAPH_METRIC_TOLERANCE

Error tolerance for numeric methods.

5.1.2 GRAPH_METRIC_MAX_ITERATIONS

Maximum number of iterations for numeric methods.

5.2 Component identification and extraction

5.2.1 graph_undirected_components

Label vertices' components treating edges as undirected.

For directed graphs, considers adjacencies as incidences. Labels start from 0 and are sequential with step 1. Component IDs are not ordered according to size.

5.2.2 `graph_directed_components`

Label vertices' components treating edges as directed.

For undirected graphs, simply call `graph_undirected_components`. For directed graphs, two vertices v_i and v_j are in the same component if and only if

$$d(v_i, v_j) \neq \infty$$
$$d(v_j, v_i) \neq \infty$$

where $d(u, v)$ is the geodesic distance between them. In other words, they are in the same component if they are mutually reachable.

Labels start from 0 and are sequential with step 1. Component IDs are not ordered according to size.