**Glossary**

**Complete graph** is a graph (see graph) in which the maximum possible number of edges exist. An undirected complete graph on nodes has edges, whereas a directed graph edges. The density (see density) of a complete graph is always 1.

**Cliques** are complete subgraphs of a network. In other words, a clique is a set of nodes which have the maximum possible number of connections between them. For example, a 3-clique in an undirected graph is simply a triangle, and in a directed graph it is a triangle with two, oppositely oriented edges along each one of its sides (6 directed edges in total). Cliques, especially the large ones, are crucial components of a network as they identify maximally interconnected regions, usually with functional significance.

**Density** of a graph or network is given by the fraction between the number of its edges and the maximum number of edges the graph could support. For example, in a directed graph on nodes, the maximum number of edges it could support is , because every node can connect to other nodes, and there are of them in total. Thus its density is , where is the number of edges.

**EDR**, the *exponential distance rule*, refers to the experimental observation that the number of neuronal projections of length found in a cortical hemisphere behaves as . It is not to be confused with the distance dependence of the interareal connection strengths, the latter measured as fraction of labelled neurons, FLNs (see FLN).

**FLN** refers to the *fraction of labelled neurons* found in a given cortical area: where is the number of labelled neurons in the area of interest and is the total number of labelled neurons, excluding those in the injected area. FLN values are used as a measure of interareal connection strengths.

**Graphs** are an abstract mathematical description of connections between objects (called *nodes* or *vertices*). For example, specifying the connections (or their lack) for every brain area pair, one defines a graph. Graphs can be represented graphically as stick-and-disks figures (nodes are disks, sticks are edges), or given by the so-called connectivity (adjacency) matrices, which is simply a two-dimensional array of 0s (no connection) and 1s (connection) between all pairs of nodes.

**-motifs** are the directed connectivity patterns that nodes can have. There are three 2-motifs because two nodes can be unconnected, unidirectionally connected or bidirectionally connected. There are 16 different 3-motifs, shown in Fig. 4a. Motif analysis studies how frequently different motifs appear in a directed network, often in comparison with a null model network.