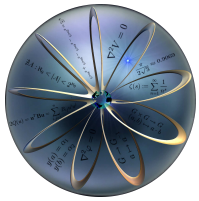

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cut

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Defines	minimum cut

On a digraph, define a *sink* to be a vertex with out-degree zero and a *source* to be a vertex with in-degree zero. Let G be a digraph with non-negative weights and with exactly one sink and exactly one source. A *cut* C on G is a subset of the edges such that every path from the source to the sink passes through an edge in C. In other words, if we remove every edge in C from the graph, there is no longer a path from the source to the sink.

Define the weight of C as

$$W_C = \sum_{e \in C} W(e)$$

where $W(e)$ is the weight of the edge e.

Observe that we may achieve a trivial cut by removing all the edges of G. Typically, we are more interested in *minimal cuts*, where the weight of the cut is minimized for a particular graph.