1. Chung,Garey,Tarjan(Strongly connected orientations of mixed multigraph)

connectivity:in an undirected graph is that every vertex can reach every other vertex via any path.
strong connectivity applies only to directed graphs.
strongly connected - directed graph, if there is path b/w every pair of vertices.
Orientation: assigning directions to edges in the undirected graph.
multigraph: graph with parallel edges or loops
mixed graph: some edges might be directed and undirected.

Robbin's work: 1.Orienting all the undirected edges of a mixed multigraph(partially oriented with loops or parallel edges in graph) preserving reachability or strong connectivity.(undirected graph is orientable iff it is strongly connected and has no

bridges.)
2. proof yields a linear-time algorithm for constructing a strongly connected orientation. his algorithm carry out:
a) DFS
b)orient every edge in the direction along which the search advances.

Boesch and Tindell: claimed that DFS can be used to find an appropriate orientation but provides no details.

Note: Results of above papers say nothing about how much distances between the vertices can increase in the process of orienting edges while preserving strong connectivity.

Chvatal and Thomassen: addresses above note in only undirected graph.

The oriented diameter of an (undirected) graph G is the smallest diameter among strong orientations of G. and is between $5d^2 + 5d$ and $2d^2 + 2d$ or atmost $r^2 + r$

This paper work: linear time algorithm of robbin's algo. and also improved chvatal and Thomassen' algo to atmost $4r^2 + 4r$
Note: these algos gives poly-time solvable.

Notations used:
undirected edges - {}
directed edges - []
either directed or undirected -()

2.Chavatal and Thomassen (Distances in Orientations of Graphs)