Large digraphs of given degree and diameter and their properties

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The degree-diameter problem for graphs and digraphs concerned the determining the largest possible graphs of given degree and diameter. We focuse on the directed vesrion of the degree-diameter problem, i.e., to determine the largest order of a digraph of a given maximum out-degree and diameter. For more details see [4]. We focuse on vertex-transitive digraphs of a given degree and diameter.

In this contribution we present the three construction of Faber, Moore, and Chen [1], Comellas-Fiol [1], and Gómez [3] which appear to give the current largest orders of vertex-transitive digraphs for any sufficiently large degree and diameter.

References

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