

RESEARCH TALK

College of Agriculture, Engineering and Science School Mathematics, Statistics and Computer Science

cordially invites you to attend a talk entitled

The Diameter of Graphs and Digraphs

by

Professor Peter Dankelmann

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DATE: Thursday, 26 May 2016 TIME: 12:30 - 13:15 VENUE: Science and Technology Education Centre, Building H1, Westville Campus

Abstract: A graph can be viewed as a set of points (called vertices) in the plane, together with some lines (called edges), each connecting two points. The distance between two vertices is the minimum number of edges one has to traverse to travel between them.

The diameter of a connected graph G is defined as the largest of the distances between its vertices. Several bounds on the diameter of graphs are known. The diameter of digraphs, i.e., "graphs" in which the lines joining points can be traversed only in one direction like a one-way-street, has received much less attention in the literature. This is probably due to the fact that for graphs often much stronger results hold than for digraphs. For example the distance between vertices is a metric in graphs, but not in digraphs. However, it has been shown recently that some bounds on the diameter of graphs hold for a large class of digraphs, so-called Eulerian digraphs. Since the class of Eulerian digraphs contains all graphs, results on such digraphs can be seen as generalisations of results on graphs.

In this talk we present old and new results on the diameter of graphs and digraphs, and we consider possible generalisations that extend results on the diameter of graphs to all Eulerian digraphs.

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