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RESEARCH TALK

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

cordially invites you to attend a talk entitled

On the number of resolving pairs in graphs

by

Dr Muhammad Imran

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DATE: Thursday, 26 May 2016

TIME: 14:00 - 14:45

VENUE: Science and Technology Education Centre, Building H1, Westville Campus

Abstract: Let G be a connected graph. An unordered pair $\{x, y\}$ of vertices of G is a resolving pair if no vertex of G has the same distance to x and y . A conjecture on the upper bound on the number of resolving pairs of graph of order n was established in 2011 (Graphs and Combinatorics (2011) 27:585–591) by Tomescu and Imran (called Tomescu-Imran Conjecture).

In this talk, I describe properties of resolving pairs and some of their applications. I also discuss the usefulness of resolving pairs in finding some bounds for the metric dimension of graphs and prediction on the nature of the metric dimension of graphs. In addition, I discuss some progress made on this conjecture and finally the recent disproving of it by Peter Dankelmann (Graphs and Combinatorics (2015) 31:2175–2180). Notwithstanding this, the resolving pair still remains a useful tool in computing the metric dimension of various classes of graphs.

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