MaSS
DST-NRF CENTRE OF EXCELLENCE IN MATHEMATICAL & STATISTICAL SCIENCES

CoE-MaSS weekly seminar series

THE DST-NRF CENTRE OF EXCELLENCE IN MATHEMATICAL AND STATISTICAL SCIENCES (CoE-MaSS) WOULD LIKE TO PRESENT A SEMINAR BY

Prof Paul Binding

(Department of Mathematics and Statistics, Universities of Calgary and Victoria, Canada)

"Introduction to the *p*-Laplacian"

Monday, 14 November 2016
10h30-11h30

Broadcast live from:
Videoconferencing Facility, 1st Floor
Mathematical Sciences Building, Wits West Campus

How to connect to this seminar remotely:
You can connect remotely via Vidyo to this research seminar by clicking on this link:
http://wits-vc.tenet.ac.za/flex.html?roomdirect.html&key=y0SSOwFsvsidbzg4qFdWXvvQtyI
and downloading the Vidyo software before the seminar.
You must please join in the virtual venue (called *"CoE Seminar Room (Wits)"* on Vidyo) strictly between **10h00-10h15**. No latecomers will be added.

Important videoconferencing netiquette:
Once the seminar commences, please mute your own microphone so that there is no feedback from your side into the virtual room. During the Q&A slot you can then unmute your microphone if you have a question to ask the speaker.

Title:
Introduction to the *p*-Laplacian

Presenter:
Prof Paul Binding, Department of Mathematics and Statistics, Universities of Calgary and Victoria, http://math.ucalgary.ca/

Abstract:
Mathematical Reviews lists around 4000 publications since the year 2000 related to the *p*-Laplacian. This differential operator is the usual (linear) Laplacian when $p = 2$ but is degenerate quasilinear when $p \neq 2$. Some of its early history and motivation, via physical and also mathematical applications, will be discussed.

This will lead to inhomogeneous (e.g., bifurcation) equations and also to homogeneous ones (e.g., of eigenvalue type). These equations are fully nonlinear when $p \neq 2$ but are of Sturm-Liouville type when $p = 2$ and the underlying dimension is one.

We will look at: some of the many results that have been generalised from $p = 2$ to $p \neq 2$; a few that fail to generalise in surprising ways; and some related open problems.