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NITheCS
National Institute for
Theoretical and Computational Sciences

S E M I N A R

Dr Byron Brassel
Durban University of Technology

Date:
Thursday, 21 November 2024

Time:
12h15-13h15 SAST

Venue:
- **NITheCS Seminar Room**
  University of KwaZulu-Natal
  Westville Campus
  3rd Floor, H-Block,
  School of Chemistry and Physics

- **Online**

Refreshments will be served

WHO SHOULD ATTEND?
This talk is intended to be accessible to postgraduate students. All are welcome!

ENQUIRIES:
Email Neli Mncube:
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The Lovelock geometry and the field equations of gravity

ABSTRACT:
David Lovelock's seminal theorem from 1972 is a paramount one in pseudo-Riemannian geometry, and its application and usefulness to general relativity (and higher order Lovelock gravity) derives from its direct connection with the field equations. In this talk, I give a brief overview on the origins of Lovelock gravity, its role as a gravitational pantocrator, and its reductions to the well-known second order theory: Einstein-Gauss-Bonnet theory (and its first order limit, general relativity), and discuss the context of dimension and its relation to the order of the theory with Lovelock's theorem. Some applications of the second order theory to collapse and singularities, in higher dimensions will be elucidated upon.

Dr Byron Brassel is a Senior Lecturer in Mathematics, in the Faculty of Applied Sciences at the Durban University of Technology.

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