

# CoE-MaSS weekly seminar series

THE DSI-NRF CENTRE OF EXCELLENCE IN  
MATHEMATICAL AND STATISTICAL SCIENCES (CoE-MaSS)  
PRESENTS A SEMINAR BY

**Prof Fazal Mahomed**

*(DSI-NRF CoE-MaSS, hosted by the  
University of the Witwatersrand, Johannesburg)*

## ***“Algebraic and Invariant Linearization Criteria for Systems”***

Friday, 11 October 2019  
10h30-11h30

CoE-MaSS Seminar Room, 1<sup>st</sup> floor, MSB, Wits.

Linearization criteria for systems of second-order nonlinear ordinary differential equations (ODEs) are looked at from their Lie symmetry properties and geometry. Two algebras that result in linearizability in terms of point transformations for such systems are studied as an extension of the scalar cases of Lie.



There are more Lie algebras that result in linearization which are mentioned. Natural extensions of these algebraic criteria for linearization to arbitrary systems also arise. Moreover, we invoke geometry to provide conditions on the invariant criteria.

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