

## **COE-Mass weekly seminar series**

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

Dr Partha Pratim Ghosh (Department of Mathematical Sciences, University Of South Africa, Florida Science Campus)

## "Internal Neighbourhood Spaces"

Friday, 03 August 2018 10h30-11h30 CoE-MaSS Seminar Room, 1<sup>st</sup> floor, Math Sci Bldg, West Campus, Wits University.



The main aim of this talk is to provide a description of neighbourhood operators in finitely complete categories with finite coproducts and a proper factorisation system such that the semilattice of admissible sub objects make a distributive complete lattice. The equivalence between neighbourhoods, Kuratowski interior operators and pseudo-frame sets is proved. Furthermore the categories of internal neighbourhoods is shown to be topological. Regular epimorphisms of categories of

neighbourhoods are described and conditions ensuring hereditary regular epimorphisms are probed. It is shown the category of internal neighbourhoods of topological spaces is the category of bitopological spaces, while in the category of locales every locale comes equipped with a natural internal topology. Email: <u>Ghoshpp@unisa.ac.za</u>



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