WITS UNIVERSITY

NITheCS
National Institute for Theoretical and Computational Sciences

MATHEMATICAL STRUCTURES SEMINAR

DATE: Thursday, 27 March 2025 | 10h15 – 11h00 SAST

VENUES:
- Department of Mathematics, University of the Witwatersrand
- Online

TALK 1

A generalisation of Riesz* homomorphisms on order unit spaces

Florian Boisen
(TU Dresden, Germany)

ABSTRACT:
Riesz homomorphisms between vector lattices are generalized by van Haandel to Riesz* homomorphisms between pre-Riesz spaces. Riesz* homomorphisms are characterized, intrinsically, via a condition on finite sets. Originally, van Haandel claimed that sets with at most two elements are sufficient. In this talk, I illustrate that, even in the setting of finite-dimensional order unit spaces, this is not true, in general.

(Joint work with Valentin G. Hölker, Anke Kalauch, Janko Stennder, and Onno van Gaans).

BIOGRAPHY:

Florian Boisen is currently pursuing his master's degree in mathematics at TU Dresden and is on the verge of completing it. Both his Master's thesis and research are centered around operator theory in pre-Riesz spaces.

TALK 2

Multimorphisms on order unit spaces

Janko Stennder
(TU Dresden, Germany)

ABSTRACT:
Generalising results from the setting of vector lattices, properties of multilinear maps on order unit spaces are presented. In particular, multi-orthomorphisms, multi-Riesz* homomorphisms, and orthosymmetric maps are considered. Identifying order unit spaces with order dense subspaces of spaces of continuous functions, we give weighted composition or integral representations for these maps. Moreover, relations between the different kinds of multilinear maps and first applications in the theory of ordered algebras are given.

BIOGRAPHY:

Janko Stennder is a PhD student and research assistant at TU Dresden. His main research interests include ordered structures in functional analysis and operator theory, in particular pre-Riesz spaces and the interplay between order theoretic and algebraic structures.

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