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CATEGORY THEORY RESEARCH SEMINAR:

2-dimensional bifunctor theorems, distributive laws and uncurrying

Dr Peter Faul (Stellenbosch University)

DATE: Tuesday, 30 April 2024 | 12h10 – 13h00 SAST

VENUES:
- Room 1006, Mathematics and Industrial Psychology Building, Stellenbosch University
- Online

ABSTRACT

In this talk we provide the conditions that need to be satisfied by two families of pseudofunctors with a common codomain for them to be collated into a bifunctor. We observe the similarities between these conditions and distributive laws of monads before providing a unified framework from which both of these results may be inferred. This we do by proving a version of the bifunctor theorem for lax functors.

When these generalised distributive laws are arranged into a 2-category Dist(B,C,D) we find that the collation of the distributive law into its associated bifunctor is given by a 2-functor into Laxop(B×C,D). Furthermore, we see that the category Dist(B, C, D) is equivalent to Laxop(B, Laxop(C, D)) and that the collation 2- functor corresponds to uncurrying.

BIOGRAPHY

Peter is a lecturer at Stellenbosch University. He earned his PhD from the University of Cambridge, UK. His research interests include category theory, semigroup theory and topology.

WHO SHOULD ATTEND?

All are welcome. It will be assumed that the audience is familiar with basic concepts of category theory.

REGISTER TO ATTEND

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