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CATEGORY THEORY RESEARCH SEMINAR:

Workshop on pointfree topology and constructive mathematics - part 4

Dr Graham Manuell (Stellenbosch University)

DATE: Tuesday, 3 September 2024 | 12h10 – 13h00 SAST

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

ABSTRACT

Constructive logic is a generalisation of classical logic that applies in more situations, including mathematical universes (toposes) where propositions can take different values at different locations in some space or where every function from $\mathbb{N}$ to $\mathbb{N}$ is computable. Unfortunately, in this general setting many classical results of point-set topology fail. However, almost all of these results can be recovered if we reformulate topology in terms of lattices of opens without predefined underlying sets of points. Moreover, this perspective also sheds light on many not-obviously-topological aspects of constructive mathematics itself.

In the penultimate lecture of the series, we will cover Hausdorffness, discreteness, compactness, overtness. These have elegant logical formulations in terms of equality in, and quantification over, locales.

BIOGRAPHY

Graham Manuell is a lecturer at Stellenbosch University. His research interests include pointfree topology, category theory, constructive mathematics and semigroup theory.

WHO SHOULD ATTEND?

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

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TO ATTEND:
https://bit.ly/3z749N6

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