Homotopy type theory and univalent foundations

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Week 2 - Term 3

WARWICK MATHEMATICS

POSTGRADUATE SEMINAR

Abstract

It's the early 2000s and Vladimir Voevodsky is dealing with a familiar grievance. An error has been discovered in a proof of his that for years has been widely accepted. How did this happen? More importantly, how to safeguard ourselves against human error as we go about our daily lives as mathematicians?

Voevodsky's quest to make amends led to renewed interest in type theory, the discovery of the univalence axiom, and ultimately to the hugely successful program to formalise mathematics we know and love today (think Lean, AGDA, Coq). In this talk, I'll give an overview of Martin-Löf dependent type theory and its homotopical interpretation; define Π-, Σ-, identity types and contractibility; and hopefully mention univalence. If time permits, I will define the circle, S^1.

Time

12 pm, 3rd May 2023

Location

Room B3.02

Organisers

Alvaro Gonzalez Hernandez
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