

Homotopy Type Theory

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Homotopy type theory is a young field born out of the discovery of deep connection between Type Theory (specifically Martin Lof's Type Theory) and Topology (specifically homotopy theory. Indeed in a precise sense types correspond exactly to spaces, and several concepts natural in type theory correspond to natural concepts in homotopy theory. This has allowed many ideas in topology to be transported to type theory. In these lectures I will introduce the relevant topological notions and relate them to Type Theory. I will not assume a background in topology beyond a familiarity with continuity of functions of real numbers. I will focus mainly on concepts and examples to give a flavour of Homotopy Type Theory.