

THE UNIVERSITY



OF HONG KONG

Department of Mathematics

Departmental Seminar

Higher-dimensional algebra: how and why?

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Abstract

In this talk I will give an introduction to and overview of Higher-Dimensional Category Theory. The talk will be at a general level and aimed at mathematicians and scientists at any level from undergraduate upwards, and possibly others. In particular, no knowledge of Category Theory will be assumed. Category Theory is the study of mathematical structures in general. It starts from the observation that a collection of mathematical structures, together with structure-preserving maps between them, is itself a mathematical structure that can be studied in its own right, yielding greater insight into the structures we started with. Category Theory provides a language and framework for studying structures in this way. What is Higher-Dimensional Category Theory? This is a good question; in fact most research in this field is still concerned with answering this apparently basic question. We try to generalise the framework above to enable greater expressive possibilities as demanded by studying the rest of mathematics. However, this is not a straightforward process. I will discuss the issues involved with moving into higher dimensions, as well as where the subject currently is, where it is going, and why it is a good idea to go there.

Date: June 27, 2002 (Thursday)

Time: 11:00 – 12:00am

Place: Room 517, Meng Wah Complex

All are welcome