Non-nonstandard Analysis

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102 Bradley Hall, 4:00 pm
(Tea 3:30 pm Math Lounge)

Abstract

There is an ancient philosphical-religious divide over questions of infinity. This divide extends over mathematics and we see it in many forms. A perfect example is offered by the twin approaches to analysis: limits and infinitesimals. With Robinson's discovery of nonstandard analysis, both approaches have achieved legitimacy.

Today, there is a new approach, non-nonstandard analysis, which, in a sense disolves the old barriers. On the one hand, the language of non-nonstandard analysis is frankly infinite. On the other hand, it is thoroughly standard underneath.

The program of non-nonstandard analysis is to reproduce the achievements of nonstandard analysis, but without recourse to the Axiom of Choice or extensive logical machinery. We will discuss a recent success, Loeb-like measures, and an application which hopes to bring together the most radical finitists and infinitists.

This talk should be accessible to graduate students.