

Non-nonstandard Analysis

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

Abstract

Running through the history of the calculus is a debate, usually philosophical, but sometimes theological, political, and even mathematical, over the legitimacy of infinite processes. The nineteenth-century theory of limits, on the one hand, allows one to do calculus in a fairly finite way. Robinson's nonstandard analysis, on the other hand, is a rigorous justification of thoroughly infinite methods.

Non-nonstandard analysis is something of a synthesis. While fundamentally finite, it justifies the language and intuition of infinitesimals and infinite numbers.

I will describe the basic structures and discuss recent work: a transfer principle, uniform convergence, and method of constructing measures on all sorts of spaces.