

SPECIAL COLLOQUIUM

Dr Vitor Neves

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will present

Rigorous Infinitesimals

3:30 pm

Thursday, December 1st

Violette Hall 1224

Abstract: In 1960 Abraham Robinson used modern logic to rigorously develop differential and integral calculus using infinitesimal numbers. Robinsons method was inspired by Skolems non-standard models of arithmetic, so he called it Non-Standard Analysis. Robinsons 1966 monograph applied his method to a wide variety of topics in analysis including his solution of an open problem on invariant subspaces of operators.

Nonstandard Analysis is a powerful method: it encompasses for instance Functional Analysis as well as Measure Theory, where many new results have been obtained by this method. It also provides a context within which many proofs of standard results become easier and more insightful at very different levels of difficulty.

We shall illustrate these ideas with theorems ranging from the basic level of Calculus, such as the Intermediate Value Theorem, to min-max type theorems of Critical Point Theory, such as Mountain Pass Theorems.

Cookies and Refreshments!!!