



Mathematics Colloquium

General topology meets model theory

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IAS)**

Abstract

Cantor proved in 1874 that the continuum is uncountable, and Hilbert's first problem asks whether it is the smallest uncountable cardinal. A program arose to study cardinal invariants of the continuum, which measure the size of the continuum in various ways. By work of Godel and Cohen, Hilbert's first problem is independent of ZFC. Still, some basic questions about cardinal invariants remained open, such as whether " $\mathfrak{P} = \mathfrak{T}$ ", which was proved in a special case by Rothberger in the 40s. The talk will explain how work of Malliaris and Shelah on Keisler's order, a problem in model theory, led to the solution of this question (in ZFC) as well as of an a priori unrelated question in model theory.

Wednesday, 17 January 2018, 4pm

Smith Hall 204

Tea and refreshments will be served at 3:45pm.