

Department of Applied Mathematics and Statistics  
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STUDENT SEMINAR

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**Tuesday**, October 3, 2006  
304 Whitehead Hall  
4:00 p.m.

SOME MATHEMATICS OF SUDOKU

ABSTRACT

Sudoku, also known as Number Place, is a logic-based placement puzzle. The aim of the puzzle is to enter a numerical digit from 1 through 9 in each cell of a  $9 \times 9$  grid made up of  $3 \times 3$  subgrids (called “regions”), starting with various digits given in some cells (the “givens”). Each row, column, and region must contain only one instance of each numeral. Although first published in a U.S. puzzle magazine in 1979, Sudoku initially caught on in Japan in 1986 and attained international popularity in 2005.

The attraction of the puzzle is that the rules are simple, yet the line of reasoning required to reach the solution may be complex. In this talk we shall cover recent results on the number of Sudoku configurations, the minimum number of “givens” a puzzle may contain and still have a unique solution, and solution strategies from the perspective of finite-domain Constraint Programming.