CCSU

DEPARTMENT OF MATHEMATICAL SCIENCES

COLLOQUIUM

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Maria Sanford, Room 101

A NEW BOARD FOR THE n-QUEENS PROBLEM

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Abstract: A classic chessboard problem asks for the number of ways of arranging 8 queens on a standard board such that no queen is under attack by another. The problem has an interesting history. Gauss worked on it and a century later computer scientists used it to illustrate a 'depth first with backtracking' search method.

The problem immediately generalizes to n queens on an n-by-n board, where the rate of growth becomes an important question. Many variants of the problem have been studied. In the principal variant, the square board is rolled up to form a torus, referred to as the modular board. In both the standard and modular cases, proofs of the growth rates were produced just five years ago.

In this talk we introduce another board – a square torus comprising $2n^2$ squares – that is unexpectedly well adapted to the n-queens problem and apparently has not been considered before. Surprising features that arise in this new setting, along with some preliminary results on the rate of growth, will be shown.

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For further information: gotchevi@ccsu.edu; 860-832-2839;
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