ST. FRANCIS XAVIER UNIVERSITY

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presents

New bounds for Peaceably Coexisting Armies of Queens

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The non-dominating queens problem consists of placing q queens on an NxN board so at to maximize the number of unattacked (free) squares. We focus on the Peaceably Coexisting Armies of Queens version of the problem, which involves placing tow equal-sized armies of queens on the board so that no two queens from opposing armies can attack each other. This version requires that at least q squares remain unattacked. The maximum size q of the two armies is known for boards up to 11x11; however, bounds have not been established for larger boards. We develop a construction which generates the best known solutions for boards larger than 9x9, and establish the bounds $\frac{9}{64}n^2 \leq k \leq \frac{1}{4}n^2$.