

# $k$ -dependence and $\frac{1}{2}$ -domination in kings graphs

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## **Abstract**

Given an integer  $k$ , what is the maximum number of kings that can be placed on an  $n$  by  $n$  board (usually a toroidal board for us), no king adjacent to more than  $k$  kings? In graph theoretic terms this is the same as asking for the  $k$ -dependence number of the  $n$  by  $n$  kings graph. The cases  $k = 4, 5$  are the most interesting ones. We allow the board to be  $n$  by  $n$  by ... by  $n$  with arbitrarily many dimensions. Linear programming and balanced ternary notation come into play. This is joint work with Eugen Ionascu.