962-05-1207 **Martin Matamala** and **Erich Prisner*** (prisner@erdos.math.louisville.edu), Department of Mathematics, University of Louisville, Louisville, KY, and **Ivan Rapaport**. *k-Pseudosnakes in Large Grids.*

Many combinatorial optimization problems can be reformulated in the search for a maximum independent set of a graph G, i.e. a set S of vertices inducing an edgeless subgraph. What happens if this total isolation of the vertices is not required, but instead we ask that every vertex of S is adjacent to at most k vertices of S in G? We call an induced subgraph $G[S]$ of a graph G a *k-pseudosnake* if its maximum degree is at most k. Then we are interested in finding maximal k-pseudosnakes. For $k = 2$ and G the D-dimensional hypercube, bounds have been given in several papers. In this paper we investigate these numbers for large grids—cartesian products of paths. We prove several upper bounds, give various constructions, and prove that these bounds are asymtotically optimal for every D when $k = 0, 1, D, 2D - 2$, or $2D - 1$. (Received October 02, 2000)