1107-05-169 **David Bevan*** (david.bevan@open.ac.uk), Department of Mathematics and Statistics, The Open University, Milton Keynes, MK7 6AA, United Kingdom. *Geometric grid classes of permutations and the matching polynomial.*

A *geometric grid class* consists of those permutations that can be drawn on a specified set of line segments of slope ±1 arranged in a rectangular pattern governed by a matrix.

A *k-matching* of a graph is a set of k edges, no pair of which have a vertex in common. If, for each k, $m_k(G)$ denotes the number of distinct k-matchings of a graph G with n vertices, then the *matching polynomial* $\mu_G(z)$ of G is defined to be

$$\mu_G(z) \;=\; \sum_{k\geqslant 0}(-1)^k m_k(G) z^{n-2k}.$$

It turns out that the growth rate of a geometric grid class is given by the square of the largest root of the matching polynomial of a certain graph associated with the geometric grid class. We will explore a proof of this result and consider some of its implications. (Received January 13, 2015)