

ON WENGER GRAPHS

FELIX LAZEBNIK, *Department of Mathematical Sciences University of Delaware, Newark, DE 19716, USA.* (lazebnik@math.udel.edu)

Abstract. Let q be a prime power, and let \mathbb{F}_q be the field of q elements. For any positive integer n , Wenger graph $W_n(q)$ is defined as follows: it is a bipartite graph with the vertex partitions being two copies of the $(n + 1)$ -dimensional vector space \mathbb{F}_q^{n+1} , and two vertices $(p) = (p_1, \dots, p_{n+1})$ and $(l) = [l_1, \dots, l_{n+1}]$ being adjacent if $p_i + l_i = p_1 l_1^{i-1}$, for $i = 2, 3, \dots, n + 1$. In this talk we will survey properties of this interesting family of graphs, present several recent results, and mention some related open problems.