Let $q = p^e$, where $p$ is a prime and $e \geq 1$ is an integer. For $m \geq 1$, let $P$ and $L$ be two copies of the $(m + 1)$-dimensional vector spaces over the finite field $\mathbb{F}_q$. Consider the bipartite graph $W_m(q)$ with partite sets $P$ and $L$ defined as follows: a point $(p) = (p_1, p_2, \ldots, p_{m+1}) \in P$ is adjacent to a line $[l] = [l_1, l_2, \ldots, l_{m+1}] \in L$ if and only if the following $m$ equalities hold: $l_{i+1} + p_{i+1} = l_ip_1$ for $i = 1, \ldots, m$. We call the graphs $W_m(q)$ Wenger graphs. In this talk we will determine all distinct eigenvalues of the adjacency matrix of $W_m(q)$ and their multiplicities. We also survey results on Wenger graphs.

This talk is based on the joint work with Sebastian M. Cioabă and Felix Lazebnik. (Received January 27, 2014)