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Lenski**. *Structure of Principal Eigenvectors and Genetic Diversity*.

The main concern of this paper is long-term genotypic diversity. Genotypes are represented as finite sequences (s_1, s_2, \dots, s_n) , where the entries $\{s_i\}$ are drawn from a finite alphabet. The mutation matrix is given in terms of Hamming distances. It is proved that the long time behavior of solutions for a class of genotype evolution models is governed by the principal eigenvectors of the sum of the mutation and fitness matrices. It is proved that the components of principal eigenvectors are symmetric and monotonely decreasing in terms of Hamming distances whenever the fitness matrix has those properties. The principal eigenvectors corresponding to the fast and slow mutations are also studied. (Received September 18, 2010)