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Miklos Bona* (bona@uf1.edu), Department of Mathematics, Little Hall, Gainesville, FL 32611-8105, and **Boris G Pittel**. *Cayley graphs of permutations and the cycle structure of the product of maximal cycles.*

The Cayley graph of a permutation p is of central importance when computing the block interchange distance of p from the identity. That graph, in turn, is closely connected to the cycle structure of the random permutation σ of $[N]$, which is the product of k independent random cycles of maximal length N . Motivated by these facts, we use the character-based Fourier transform to study the number of cycles of σ and also the distribution of the elements of the subset $[\ell]$ among the cycles of σ . Some of our work provides new proofs for results of Stanley, Bernardi, and others, while some of our formulas are new. (Received January 16, 2016)