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Florin P Boca* (fboca@illinois.edu), Urbana, IL 61801, and **Maksym Radziwill** (maksym.radziwill@mcgill.ca), Montreal, Quebec H3A 0B9, Canada. *Moments and Distribution of Eigenvalues in Large Sieve Matrices.*

The classical large sieve inequality in number theory provides an upper bound estimate for the largest eigenvalue of the N by N matrix A^*A , where A is a Vandermonde type matrix defined by roots of unity of order at most Q (a.k.a. Farey fractions of order Q). This talk will discuss some aspects concerning the behavior of the eigenvalues of these matrices when $N \sim cQ^2$, with $Q \rightarrow \infty$ and $c > 0$ constant. In particular, we establish asymptotic formulas for their moments of all orders, proving as a corollary the existence of a limiting distribution as a function of c , and answering in the affirmative a problem of Olivier Ramaré. (Received February 05, 2017)