Exposé court

57 *The distribution of partial quotients of reduced fractions with fixed denominator*

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In this talk, we discuss the distribution of the partial quotients of fractions a/N where the denominator N is fixed, and a runs through the set of all integers which are coprime with N. The presented method is rather flexible and allows to compute statistics for various entities of interest. Among other results (such as Gauss-Kuzmin statistics), we recover concentration results for the sum of partial quotients and for Dedekind sums, matching the tail behaviour that is known under an extra averaging over the denominators N. A similar result for the distribution of the maximal partial quotient gives the currently best bound for Zaremba's conjecture for general N. This is joint work with Christoph Aistleitner and Bence Borda (arXiv:2210.14095).