On the distribution of small denominators in the Farey series of order N.

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Let N be a positive integer.The Farey series of order N is the sequence of rationals h/k with h and k coprime and $1 \leq h \leq k \leq N$ arranged in increasing order between 0 and 1. For $i = 1, \ldots, N$ let q_i denotes the smallest denominator possessed by a rational from F_N which lies in the interval $\left(\frac{i-1}{N}, \frac{i}{N} \right]$.

We shall discuss the growth of the sum $q_1 + \cdots + q_N$ and the related and beautiful work of R.R.Hall on the distribution and second moments of gaps in the Farey series.