Title: Hausdorff measure for continued fraction iterated function system.

Abstract: Let $G$ be the infinite iterated function system corresponding to the Gauss map, i.e. G is the collection of maps $g_k(x) = \frac{1}{x+k}, \quad k \in \mathbb{N}$.

Next, let $G_n$ be the finite subsystem built by restricting the collection of maps $g_k$ to $n$ initial ones.

Let $J_n(G)$ be the limit set of the subsystem $G_n$ This is the set of irrational numbers whose infinite continued fraction expansions have all entries in the finite set $\{1,2,...,n\}$. Denote by $h_n < 1$ its Hausdorff dimension. In my previous work joint with Mariusz Urbański we proved the following continuity result: let $H_n$ be the Hausdorff measure of $J_n(G)$, evaluated at its Hausdorff dimension $h_n$. Then $\lim_{n\to\infty} H_n = 1$. The main difficulty comes from the fact that the numerical value of Hausdorff measure is not directly visible by tools of thermodynamic formalism.

In this talk, I will present a new result showing exact asymptotics of $H_n$. This asymptotic behaviour is different from that for $h_n$. The talk is based on joint work with Rafał Tryniecki and Mariusz Urbański.