Convergence of random continued fractions

L. Lorentzen
Department of Mathematics
Norwegian University of Science and Technology
7491 Trondheim, Norway
lisa@math.ntnu.no

Let $\mu(z)$ be a probability measure on the complex plane $\mathbb{C}$ minus the origin, where

- the expectation $\mathbb{E}\{\ln(1+|z|)\} < \infty$, and
- the support $\operatorname{supp}\mu$ contains more than one point.

Let $K(a_n/1)$ be a continued fraction whose elements a_n are picked randomly from $\mathbb{C} \setminus \{0\}$ according to this measure.

We address the question: under what conditions on μ will $K(a_n/1)$ converge with probability 1?

We shall see that there are some mild sufficient conditions with surprising consequences.