

ABSTRACT. To each irrational number  $x$  is associated an infinite sequence of rational fractions  $\frac{p_n}{q_n}$ , known as the convergents of  $x$ . Consider the functions  $q_n|q_nx - p_n| = \theta_n(x)$ . We shall primarily be concerned with the computation, for almost all real  $x$ , of the ergodic sum

$$\lim_{n \rightarrow \infty} \frac{1}{n} \sum_{k=1}^n \log \theta_k(x) = -1 - \frac{1}{2} \log 2 \approx -1.34657.$$