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**Título:** On The Convergence Of Eckf (Nkx)

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**Sinopsis**

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Let  $f$  be a periodic measurable function and  $x(n_k)$  an increasing sequence of positive integers. The authors study conditions under which the series  $\sum_{k=1}^{\infty} c_k f(n_k x)$  converges in mean and for almost every  $x$ . There is a wide classical literature on this problem going back to the 30's, but the results for general  $f$  are much less complete than in the trigonometric case  $f(x) = \sin x$ . As it turns out, the convergence properties of  $\sum_{k=1}^{\infty} c_k f(n_k x)$  in the general case are determined by a delicate interplay between the coefficient sequence  $(c_k)$ , the analytic properties of  $f$  and the growth speed and number-theoretic properties of  $(n_k)$ . In this paper the authors give a general study of this convergence problem, prove several new results and improve a number of old results in the field. They also study the case when the  $n_k$  are random and investigate the discrepancy the sequence  $\{n_k x\} \bmod 1$ .

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