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Limit processes with independent increments for the Ewens sampling formula. (English. English summary)

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The Ewens sampling formula [W. J. Ewens, *Mathematical population genetics*, Springer, Berlin, 1979; MR 81f:92019] induces a measure on the set of vectors (k_1, \dots, k_n) of non-negative integers such that $\sum_{i=1}^n ik_i = n$. The probability function is defined by

$$p(k_1, \dots, k_n) = \frac{n!}{\theta(\theta+1)\cdots(\theta+n-1)} \prod_{j=1}^n \binom{\theta}{j}^{k_j} \frac{1}{k_j!}$$

for some $\theta > 0$.

It is shown that the sequence of certain dependent sums involving functions of k_j converges weakly to a process of independent increments in the space $D[0, 1]$ endowed with Skorokhod topology. This extends results due to J. C. Hansen [J. Appl. Probab. **27** (1990), no. 1, 28–43; MR 91b:60027] and the authors [Sankhyā Ser. A **61** (1999), no. 3, 312–327; MR 2001j:60016], where the limit processes were Brownian motions. An example is given when the limit process is a homogeneous Cauchy process. *Endre Csáki* (H-AOS)