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**Brownian motion for random permutations. (English. English summary)**

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Summary: “A family of measures on the set of partitions of an integer, known as the Ewens sampling formula, arises in population genetics. Mixtures of these measures also have applications in Bayesian statistics. Using methods from probabilistic number theory, a functional limit theorem in  $C[0, 1]$  is established for a partial sum process based on these measures. The results can be used to develop statistical methods to test the validity of certain genetic models. It is interesting to note that a Lindeberg-type condition is necessary for the dependent process to converge to the Brownian motion, while it is not the case for the convergence of the one-dimensional distributions. An example to illustrate this phenomenon is constructed.”