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Record process on the Continuum Random Tree

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We consider the number of cuts X_n needed to isolate the root of the sub-tree spanned by n leaves uniformly chosen at random in Aldous's continuum random tree \mathcal{T} . We prove the almost sure convergence of $X_n/\sqrt{2n}$ to a Rayleigh random variable Z . We get from the a.s. convergence a representation of Z as the integral on the leaves of \mathcal{T} of a record process indexed by the tree \mathcal{T} . The proof relies on a Brownian Snake approach. This result was motivated by Janson's convergence in distribution of the renormalized number of cuts in a discrete random tree.

Comments: arXiv admin note: substantial text overlap with [arXiv:0904.4175](#)

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