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Smallest components in decomposable structures

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Abstract The smallest size of components in random decomposable combinatorial structures is studied in a general framework. Our results include central and local theorems for the size of the r th smallest component of an object of size n . Expectation, variance and higher moments of the r th smallest component are also derived. The results apply to several combinatorial structures in both the labelled and the unlabelled case. We exemplify with several combinatorial structures like permutations and polynomials over finite fields.