엔트로피최대화방법을 이용한 극미부 확률의 추정
Estimation of Rare Events Probabilities by the Maximum Entropy Method

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ABSTRACT

We propose the use of the maximum entropy method (MEM) for estimation of rare events probabilities. This method does not presume any distribution function form, but instead flexibly incorporates information from samples as constraints in the associated optimization problem that maximizes the entropy. While moments information is usually used for MEM, to better estimate diverse tail probability patterns, we introduce new information on tails including tail moments and non-polynomial transformations of the sample values. The new bases are used for representing diverse functional forms of distributions. We apply the method to several known distributions and compare our method with a popular existing method, the generalized extreme value theory (GEVT) method.