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APPLICATION OF TUBE METHOD FOR THE MAXIMUM OF GAUSSIAN RANDOM VARIABLES WITH DISCRETE INDEX SET

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The tube method is a differential geometric method to evaluate the tail probability of e.g. the maximum of a Gaussian random variables indexed by a continuous index set. In some statistical applications with a kind of irregularity, the likelihood ratio test statistic becomes asymptotically the maximum of a Gaussian random variables indexed by a discrete index set, and its tail probability is required. In this presentation, the tube method has been applied to evaluate the probability and construct a conservatibe testing.