Abstract

The mathematical theory of reliability has grown out of the demand of modern technology and particularly out of the experience with complex systems. The main objective is to enhance the ability of such complex network systems. This work presents an efficient algorithm, which is a novel approach to generate all the minimal paths of the general flow network based on the principle of backtracking. It is a general flow network because, the proposed approach can find the minimal paths for multiple sources and multiple sinks in the network. One can further evaluate the network reliability using any existing SDP (Sum of Disjoint Products) based approach.
References

- D. Rath and K. P. Somam, 1997 "A simple method for generating k-trees of a

**Index Terms**

Computer Science  
Algorithms

**Keywords**

Path Sets  
Cutsets  
Network Reliability  
Backtracking