# An Extended Factoring Formula in Computing Two Terminal Reliability of Undirected Network

홍정식 (서울산업대학교 산업공학과)
전영호 (홍익대학교 산업공학과)

Two terminal reliability is the probability that the specific two vertices are connected by working edges in an undirected network. Two terminal reliabilty computation problem is known to be NP-hard. Several reliablity-preserving for this problem are presented. A factoring algorithm solves this problem by using these reductions and pivoting repeatedly. In this paper, reduction incorporated pivoting method is presented for delta-star & star-delta transformations. This method presents the exact formular for star-delta & delta-star transformations. It should be noted that this method does not introduce "artificial unreliable vertex" for delta-star transformation. Consequentiy, delta-star & star-delta transformations can be easily integrated into the factoring algorithm for computing two terminal reliability.