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A Combinatorial Approach of Real GA & Fuzzy to ATC Enhancement

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[Keywords](#)



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**Abstract:** Under new de-regulated environment an open access to transmission system seems to be desired. Transmission system operators (TSOs) are encouraged to use the existing facilities more efficiently. This paper focuses on study of the best location for SVC as a FACTS device to improve voltage profile as well as maximum available transfer capacity (ATC) in order to achieve lower prices. Real genetic algorithm (RGA) is used for optimization technique and analytical hierarchy process (AHP) associated with fuzzy sets to obtain priority vector for each alternative to evaluate the GA fitness. The effectiveness of the proposed methodology is shown through case studies.

**Key Words:** Available Transfer Capacity (ATC), Analytical Hierarchy Process (AHP), Real Genetic Algorithm (RGA), Flexible AC Transmission Systems (FACTS), Electricity Markets

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