

# Direction Determination of Flows and its Application in Stochastic Network Optimization

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**Abstract:** In meshed, potential-driven networks (such as gas or electric power) finding a feasible flow solution for a given nomination is difficult. The capacity estimation problem of such networks where inputs and outputs are largely unknown then is even more demanding and usually approximated by finding solutions for estimated regular and/or extreme scenarios. Resorting to graph theory an approach is presented to reduce the number of feasible flow directions. For stochastic network optimization problems this has positive impact on solution time by solving smaller problems or even enables decomposition.

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