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Quantitative Modeling In Parallel Systems

Approximate Solutions for Open Networks with Breakdowns and Repairs

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Abstract Network models whose nodes are subject to interruptions of service are notoriously difficult to solve. There are no exact results for systems with more than two nodes, and even the approximations that have been proposed turn out to be rather unsatisfactory. We assess the existing approaches and develop new approximation methods. The latter's accuracy is evaluated by comparisons with simulations and is shown to be acceptable over a large range of parameter values.

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