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Resource Allocation for QoS Provisioning in Wireless Ad Hoc Networks

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- [res_alloc_qos.pdf](#)

For wireless ad hoc networks with multihop transmissions and Rayleigh fading, this paper maximizes the overall system throughput subject to QoS constraints on power, probability of outage, and data rates. Formulations are also given which minimize delay and optimize network resources in a wireless ad hoc network, where each link is shared by multiple streams of traffic from different QoS classes, and each traffic traverses many links. Although these optimal resource allocation problems are non-linear, they can be posed as geometric programs, which are transformed into convex optimizations, and can be solved globally and efficiently through interior-point methods.

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