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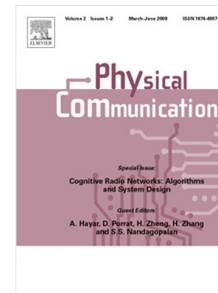
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Energy Efficient and Delay-Constrained Sleep Period Optimization for Green Radio Communication

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Abstract

Green communication technology research deals with the methods to achieve efficient energy utilization by radio communication devices. Recent advances in this area include radio resource optimization, radio resource management, and optimal sleep control. In this paper, we focus on the problem of optimizing mean cost subject to a constraint on sleep period. We solve this problem and find the optimal solution to the sleep period and investigate the behavior of the optimum sleep period and the standard deviation of the cost function. We then present numerical results for optimum sleep period, and statistical parameters, namely, standard deviation, and deviation figure. This work not only models mean cost optimally but also compares with ad hoc average costs, which do not account both energy consumption and delay.

Keywords: Green radio, communication, optimization, energy efficiency, cost function, sleep period, statistical averages.

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