



## Abstract

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### **A TWO-THRESHOLD GUARD CHANNEL SCHEME FOR MINIMIZING BLOCKING PROBABILITY IN COMMUNICATION NETWORKS**

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**Abstract** In this paper, we consider the call admission problem in cellular network with two classes of voice users. In the first part of paper, we introduce a two-threshold guard channel policy and study its limiting behavior under the stationary traffic. Then we give an algorithm for finding the optimal number of guard channels. In the second part of this paper, we give an algorithm, which minimizes the number of channels subject to hard constraints on the blocking and dropping probabilities of calls. Finally, we propose an optimal prioritized channel assignment for multi-cells cellular networks with two classes of voice users.

**Keywords** Call Admission Control, Guard Channels, Two-Threshold Guard Channels, Wireless Networks

**چکیده** در این مقاله مسئله کنترل پذیرش درخواست ها در شبکه های سیار سلولی با دو سرویس صوتی بررسی می شود. در بخش اول مقاله، روش کانال احتیاط دو آستانه ای ارائه و رفتار آن برای ترافیک های ایستا بررسی می گردد. سپس الگوریتمی برای پیدا کردن تعداد بهینه کانال های احتیاط ارائه می شود. در بخش دوم مقاله، با توجه به محدودیت احتمال قطع رد درخواستها، الگوریتمی برای پیدا کردن تعداد کمینه کانال های مورد نیاز سلول ارائه می گردد. در انتها، یک الگوریتم متناسب کانال اولویت دار برای شبکه های سلولی سیار با دو سرویس صوتی ارائه می شود.

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