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Waiting Time Distribution in a Class of Wireless Multi–Channel Local Area Networks

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Abstract The waiting time distribution in a class of wireless multi–channel local area networks is derived. The networks comprise base stations controlling several channels operating under a time–slotted sharing policy. This system maps naturally onto a model in which the intervisit time has a probability mass function of phase–type. We derive a set of matrix equations with efficient iterative procedures for their solution and controllable accuracy in their numerical evaluation. Furthermore, the methodology can be extended to several other polling strategies.

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