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Sequential signaling under peak-power constraint in the Poisson regime

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Abstract

Sequential signaling over the single-user and two-user multiple-access Poisson channel subject to peak-power constraint is considered. Specifically, we analyze first the performance of a sequential signaling scheme similar to the one proposed by Schalkwijk and Barron in [**?**], for the AWGN channel, in the Poisson regime. Assuming that information is transmitted in blocks, and the channel is corrupted by additive constant dark current, the error exponent for the single-user case in the low power regime is determined. Then an extension of the Schalkwijk-Barron scheme for the two-user case is suggested and in this case an attainable exponent in the low power regime is established.

Index Terms – Poisson channel, feedback error exponent, sequential signaling.

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