

Statistics of simultaneous Rice, Nakagami- m and α - μ fadings after SC combining

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Abstract—This paper presents initial results of a research towards statistical description of diversity-combined wireless signals that propagate over different environments. This kind of situation is encountered when receiver has multiple input antennas which are positioned in such a way that the fading environment cannot be considered uniform for all propagating paths of signals. We consider a three-input selection combining (SC) combiner with three different fading statistics on each of them, and derive the probability density function and cumulative distribution for the output signal. The results can be further used for calculating various system performance measures.

Keywords-fading;diversity reception;signal combinig; statistical signal description