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Abstract

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Frequency offset estimation for DPSK

There is provided an apparatus and method for estimating frequency offset for a receiver for DPSK signals comprising in-phase I and quadrature Q components for a plurality of symbols k. The apparatus comprises a differential detector for performing differential detection of a received signal over a symbol span of n symbols, where n is an integer greater than 1, a frequency corrector for performing an initial correction of I and Q using a previously estimated value of the frequency offset, a rotation block for rotating the phase of each symbol towards zero; and a calculator for calculating an estimate of the frequency offset by comparing the phase of each symbol with zero, the calculator being arranged to input the estimate into the frequency corrector for improving the previously estimated value of the frequency offset.

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Figure for publication – Figure 7