Abstracts

Analysis of Automatic Homodyne Method Amplitude and Phase Measurements (Comments)

In the above short paper, on page 623, the authors state: "Phase quadratrue between the homodyne and the modulated carriers produces a null in the detector output.... " This is only true if the modulated carrier is completely suppressed, which is the ideal case discussed by Robertson. Inspection of the phasor when the carrier is not suppressed, as in Schafer, shows that the null is produced when the modulated carrier is in phase quadrature with the resultant of the homodyne and modulated carriers. The error introduced by the authors' assumption of quadrature conditions varies from less than 0.01° for a 90-dB ratio to 90° for equality of the two signals. In most applications this error is less than 0.6° (40 dB or greater ratio), and for moderate accuracies it can be ignored. For more precise measurements, however, one must use the resultant and modulated carrier in phase-quadrature analysis.

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