03CM162 Measurement of Amplitude Ratio and Phase Shift between Sinusoidal Voltages with Superimposed Gaussian Noise

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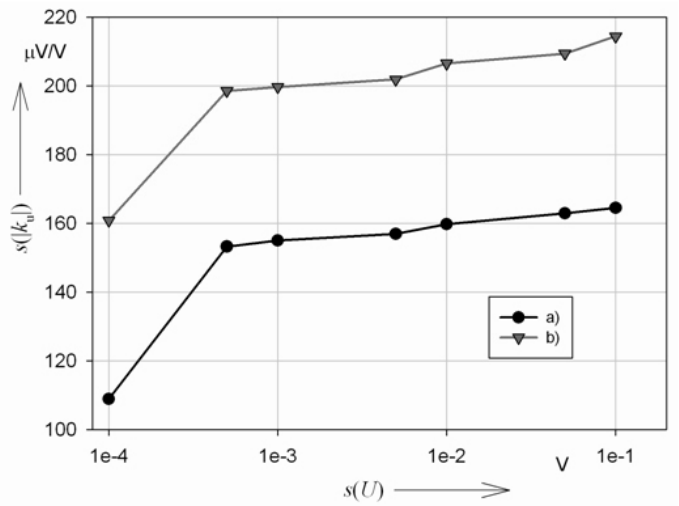
The paper presents basic description and some simulation results of a correlation method which together with the fractional delay sampling technique can be applied to measurements of the complex amplitude ratio of sinusoidal voltages with superimposed Gaussian noise. The method allows reduction of the influence of the white noise on the result of measurement.



The calculated standard deviation of amplitude ratio of u1(t) and u2(t) as a function of standard deviation of Gaussian noise for: a) the correlation method with fractional delay sampling, b) DFT method.

03CM174 Good Practice Guide for calibrating a hydrophone "in situ"

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Nowadays a multitude of tests performed in the marine environment such as the measurement of pH, CO2, etc. Some of the tests performed are the measurement of noise pollution as well as the study of cetaceans in the marine environment. To perform this type of test hydrophones are used. These devices are microphones for the marine environment. The calibration of this equipment is detailed in various standards such as [1] as a function of frequency. In our case we propose the calibration of the hydrophone in the marine environment, in situ. This method of calibration involves a considerable increase in the uncertainty, but in many cases this increment of the uncertainty compensates little investment in performing calibration.

The aim of this paper is to provide the basis for the calibration of a hydrophone "in situ", thus assigning a value of uncertainty, which may be high, but according to requirements may be sufficient.