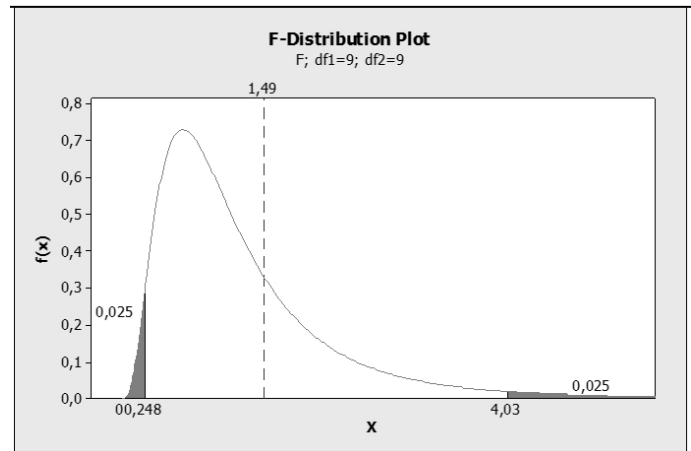


25TS099 Hypothesis Test on the ratio between two measurement uncertainties

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In a measurement context often it is fundamental to verify if two independent measurement processes give origin to the same uncertainty. The comparison between these two uncertainties is important, for instance when we use two or more different instruments. We apply this method to then uncertainties of two digital oscilloscope measuring rise/fall time of a signal. It is also possible to apply this test only to verify this property if it is requested by other important hypothesis tests like that about the difference between the measurand estimators. This technique is also the base to the ANOVA (ANalysis Of VAriance) procedure.



F-distribution plot

25TS118 Improving the result of the histogram test using a fast sine fit algorithm

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To accurately characterize an ADC using the sinewave histogram test the input signal has to meet strict conditions: sampling has to be coherent, and the number of periods has to be relative prime to the number of samples. Due to the limitations in the precision of the sine and sampling frequency, such conditions can be checked only from the measured signal. In this paper a new method is presented which is able to determine the meeting of above conditions, and if the signal fails to do so, it can determine the number of samples to be neglected in the measurement to improve the precision of the histogram test result.