Review of: "Pulse Amplitude Measurement Using Low Sampling ADC and Interpolation Technique"

Hamid Rahimpour[1]

1 University of Tehran

Potential competing interests: No potential competing interests to declare.

The paper investigates various interpolation methods, focusing on their complexity and performance. However, several areas require further clarification and improvement, which are listed as follows:

Input Pulse Characteristics:

- The paper briefly mentions that 1000 input Gaussian pulses were generated and sampled at 1 MHz and 12-bit resolution. However, the variance of the Gaussian distribution used to generate these pulses is unclear.
- It is important to specify whether all 1000 pulses share the same variance. If so, this may limit the validity of the comparison. Exploring different variances and comparing each algorithm under various circumstances could enhance the analysis.

Sample ADC Placement in Figure 4:

- Figure 4 displays the sample ADC placed at the peak of the waveform. This choice requires further explanation since it could directly impact the comparison results.

Error Attribution: Noise vs. Interpolated Algorithms:

- Clarifying the contribution of noise in the input signal versus the errors introduced by the interpolated algorithms would provide better understanding.

Error Comparison in Fig. 5:

- Figure 5 lacks numerical context for readers. Instead of individual error values for 1000 pulses, considering representing the error distribution using a Gaussian curve (mean and variance) would be beneficial.
- Additionally, visualizing the output of each algorithm for specific scenarios (e.g., highest and lowest error) alongside the calculated error would enhance reader comprehension.

Errors vs. Complexity Comparison:

- While the comparison between error and complexity is informative, presenting both next to each other would improve readability.