# Article information:

Estimation of charge, energy and polarity of noisy partial discharge pulses | IEEE Journals & Magazine | IEEE Xplore
<https://ieeexplore.ieee.org/document/8035428>

# Article summary:

1. The algorithms for the estimation of charge, energy and polarity of partial discharge (PD) pulses are affected by noise.

2. A theoretical study is performed to evaluate the extent of affectation on the results due to the noise.

3. A new method for the estimation of PD polarity is proposed based on the derivative of the filtered pulse, showing accurate estimation even for pulses with low signal to noise ratio.

# Article rating:

May be slightly imbalanced: The article presents the information in a generally reliable way, but there are minor points of consideration that could be explored further or claims that are not fully backed by appropriate evidence. Some perspectives may also be omitted, and you are encouraged to use the research topics section to explore the topic further.

# Article analysis:

The article provides a detailed analysis of how noise affects the algorithms used to estimate charge, energy and polarity of partial discharge (PD) pulses. The article is well-researched and provides a comprehensive overview of how different methods can be used to estimate these parameters in time domain, frequency domain and according to impulse response method (standard IEEE 270). The article also presents a new method for estimating PD polarity which shows accurate results even for pulses with low signal to noise ratio.

The article does not present any potential biases or one-sided reporting, as it provides an unbiased overview of different methods used for estimating PD parameters and their accuracy in presence of noise. It also does not contain any unsupported claims or missing points of consideration as it provides a thorough analysis backed up by evidence from simulations and experiments. Furthermore, there is no promotional content or partiality in the article as it objectively presents different methods without favoring any particular one over others.

The only potential issue with this article is that it does not explore possible risks associated with using these methods in practice, such as errors due to incorrect calibration or faulty equipment which could lead to inaccurate results. Additionally, while the article does provide an objective overview of different methods used for estimating PD parameters, it does not present both sides equally as some methods are discussed in more detail than others.

# Topics for further research:

* Partial discharge estimation accuracy
* Partial discharge parameter estimation risks
* Partial discharge calibration errors
* Partial discharge impulse response method
* Partial discharge polarity estimation
* Partial discharge signal to noise ratio

# Report location:

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