

A novel method to find jumps in waveforms

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Because of electromagnetic interference from the environment, vacuum chamber potential fluctuations or other various reasons, the plasma diagnostic signal waveform often jumps, bringing great trouble to the data analysis. There are already some methods to achieve jump detection, such as by detecting the ratio of change over RMS, or comparing short-time Fourier transform spectrogram. However, all these methods are not intelligent enough, and require several key parameters to be given manually.

This poster proposes a jump detection method based on image recognition, which trains a neural network through a certain amount of labeled data, thus automatically finding jumps on the diagnostic signal waveform without parameters, with a fairly satisfactory level of accuracy.

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