# The Function of Fast Kurtogram Filter

Signal denoise based on fast kurtogram filter.

## Description

Fast kurtogram filter returns the filtered signal. "File Upload" is used to load the required data set, and the required parameters should be set in the "Parameter" field.

## Parameter introduction

Parameters of fast kurtogram filter:

Sample parameter:

* Sampling frequency: Sampling frequency. (data type: float)

Function parameters:

* Level: The number of decomposition levels. (data type: int)
* Mode: The mode of filter: "lowpass", "bandpass", "highpass".
* Order: The order of the filter. (data type: int)
* Image: Whether to display the kurtosis-image or not, "True" or "False".

**Functional description of the main components**

The overall view of the function of the fast kurtogram filter is divided into "File Upload", "Parameter", and "Result".

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### File Upload

The uploaded data files support ".mat", ".txt", ".csv", ".xls", and ".npy" format files.



### Parameter

The user can set the parameters here.

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### Result

After the software has been run, click the "Show Result" button to display the signal diagram before and after noise reduction.

图片包含 图表

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The "Download" button downloads the relevant result images and data.

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**Examples**

The process of using fast kurtogram filtering in signal processing to achieve noise reduction.

**Step 1: Configure the procedure**

Select "Data Processing" from the process bar on the left side of the web page.

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**Step 2: Select the function**

Select the procedure that needs to be configured from the process display area.

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The ''Fast Kurtogram Filter'' function is chosen for signal processing.

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**Step 3: Upload the data file**

Select the data file to be applied from the local path.



Click "Upload" after successfully selecting the upload data file.

**Step 4: Set and save the parameters**

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Firstly, the user needs to set the "Level", "Sampling frequency", and "Order".

Then choose "Mode" from the drop-down box.

The option "Image" provides the user with the choice of whether to display the kurtosis diagram or not.

If "True" is selected, the kurtosis diagram will be plotted and downloaded.

图表

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K\_max: Maximum kurtosis.

Level: Decomposition level.

Bw: Bandwidth.

fc: Central frequency.

The location of the dot in the graph corresponds to the maximum kurtosis.

Finally, click "Save" after all parameters are configured.

**Step 5: Execute the configured procedure**

Before executing the configured function, the user also needs to set the selected output image and file format.

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Finally, select "Run".

**Step 6: Show the result**

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When the progress bar reaches the end, the task is completed.

**图片包含 文本

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Select "Show Result" to simply view the graphical results of the function.

图片包含 图表

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The displayed result graph is the signal diagram before and after noise reduction.

**Step 7: Download**

Click "Download" to download the file of data and images.

