# The Function of Empirical Mode Decomposition (EMD)

Signal denoise based on the EMD.

## Description

EMD is a noise reduction method by decomposing the signal and retaining the low frequency IMF components. It 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

Parameter of EMD:

Function parameter:

* Number of IMFs selected: Maximum number of IMFs. (data type: int)

**Functional description of the main components**

The overall view of the function of EMD 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 parameter 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.

图表

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The "Download" button downloads the relevant data and two diagrams: The signal diagram before and after noise reduction and the EMD decomposition diagram.

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图表, 折线图

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**Examples**

The process of using EMD 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 ''EMD'' 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 parameter**

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The user only needs to set one parameter. For details about the parameter, see "Parameter introduction".

Then click "Save" after the parameters is 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.

图表

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**Step 7: Download**

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

