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Median Filtering

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Author:	OriginLab Corporation	**Date Added:**	5/28/2004
Downloads:	531	**Last Update:**	5/28/2004
Total Ratings:	2	**File Size:**	2526 Bytes
Average Rating:	★★★★☆	**File Name:**	MedianFilter.c
Created Using:	Origin 7.5	**File Version:**	1.0
Working Versions:	7.5,7.0		
License:	Free		

Summary:

This Origin C file adds a new script command to perform median filtering of noisy 1D data.

Description:

Median filtering is particularly useful when shot/spike noise is present in the data, such as in the sample image pasted here.

Instructions:

1> Download this OC file and save it to a folder (suggested location: \OriginC\OriginLab subfolder under your user files area).
2> Add this file to your Code Builder workspace and compile and build.
3> Go to the script window and type command for filtering, such as:
median_filter data1_b data1_c 5
and hit enter.
This will filter the data in data1_b column, and place the filtered result in data1_c. The third parameter, 5 in the above example, is the number of points on either side to be considered for computing median - see Algorithm below for further information.

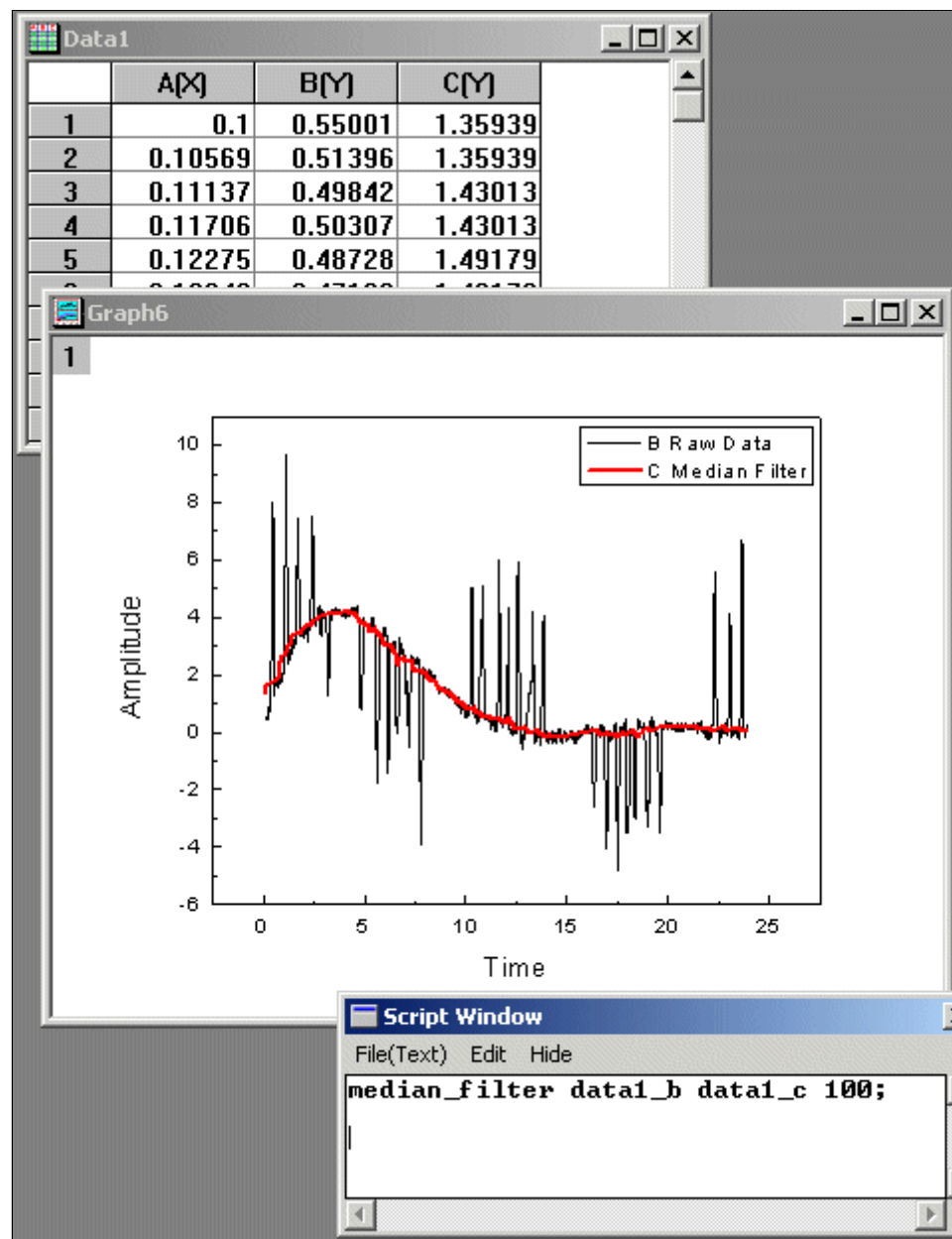Note that the datasets should exists before executing this command.

To have this command available in each session of Origin, add this Origin C function to the System folder of the Code Builder workspace tree (version 7.0SR4 or higher).

Algorithm:

For each point in the source dataset, a group of points on either side of this source point are taken, and the median value of the group is computed. This median value is then entered into the result dataset at this position.

The size of the group is specified by the user in the script command as the third argument. The number provided by user corresponds to number of points on either side of the source point to be considered for the group. For points in the source close to the edges, there are not enough neighboring points. Then the median is computed with as many points as are available.

Screen Shot:

Data1

	A[X]	B[Y]	C[Y]
1	0.1	0.55001	1.35939
2	0.10569	0.51396	1.35939
3	0.11137	0.49842	1.43013
4	0.11706	0.50307	1.43013
5	0.12275	0.48728	1.49179

Graph6

Script Window

File(Text) Edit Hide

```
median_filter data1_b data1_c 100;
```

Reviews:

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