RunLwsBw Documentation

RunLwsBw will generate a butterworth filter trace.

Synopsis

```
RunLwsBw lowCut lowRollOff highCut highRollOff sampleRate
numberOfFilterSamples
```

We `Return` the time array representing the filter in out standard [file format](#). We also place a copy of the filter in the local file `lastDataOutput`.

Defaults

The default values for the input are:

Name	Type	Default Value
lowCut	**float**	0.05
lowRollOff	**float**	24
highCut	**float**	25
highRollOff	**float**	24
sampleRate	**float**	0.01
numberOfFilterSamples	**long**	8192

Theory

The filter is generated in the frequency domain. All data between the `lowCut` and the `highCut` is passed intact. The rate of roll-off of the filter on the low side is `lowRollOff` Db per octave and the high side is `highRollOff` Db per octave.
A frequency domain filter is applied as follows:

Another filter sometimes used is the Butterworth lowpass filter. In this case, H(u,v) takes the form where n is called the order of the filter. This keeps some of the high frequency information, as illustrated by the second order one dimensional Butterworth filter shown in Fig. 17, and consequently reduces the blurring.

For more information see:

[Wm P. Kamp](#)