Instrumental Extractor

Copied from (with minor tweaks):

https://www.reddit.com/r/matlab/comments/1qrpzf/comment/cdfx67l/?utm_source=share&utm_medium=web3x&utm_name=web3xcss&utm_term=1&utm_content=share_button

1. Read audio file in

```
[Y, fs] = audioread("Will You Won't You Join The Dance (Mock Turtle Version).mp3");
```

2. Set parameters

```
%Window length (choose power of 2 for quick DFT)
wl = 512;
%Step size (for overlap and account for windows)
step = 300;
%Window - hann gives good sound back
w = hann(wl);
%Filter out extremes
min = 0.7;
max = 1.5;
```

3. Filter vocals out

```
%Set up output array
out = zeros(size(Y));

%i is starting index
for i=1 : step : size(Y,1)-wl
    %Get data and window
    dat = Y(i:i+wl-1,:).*[w,w];
    datL = dat(:,1);
    datR = dat(:,2);
    fftL = fft(datL);
    fftR = fft(datR);
    %Use this instead of for loop with if for faster processing
    dif = abs(fftL ./ fftR);
    mask = ones(size(datL));
    mask((min<dif) & (dif<max)) = 0;

    fftL = fftL.*mask;
    fftR = fftR.*mask;

    lout = ifft(fftL);
    rout = ifft(fftR);
```

```
    datout = [lout,rout];

    out(i:i+wl-1,:) = out(i:i+wl-1,:) + datout;
end

audiowrite('tmp.wav',out,fs)
```

4. Sanity check the instrumental

```
[y2, Fs2] = audioread("tmp.wav");
player = audioplayer(y2, Fs2);
play(player)
```