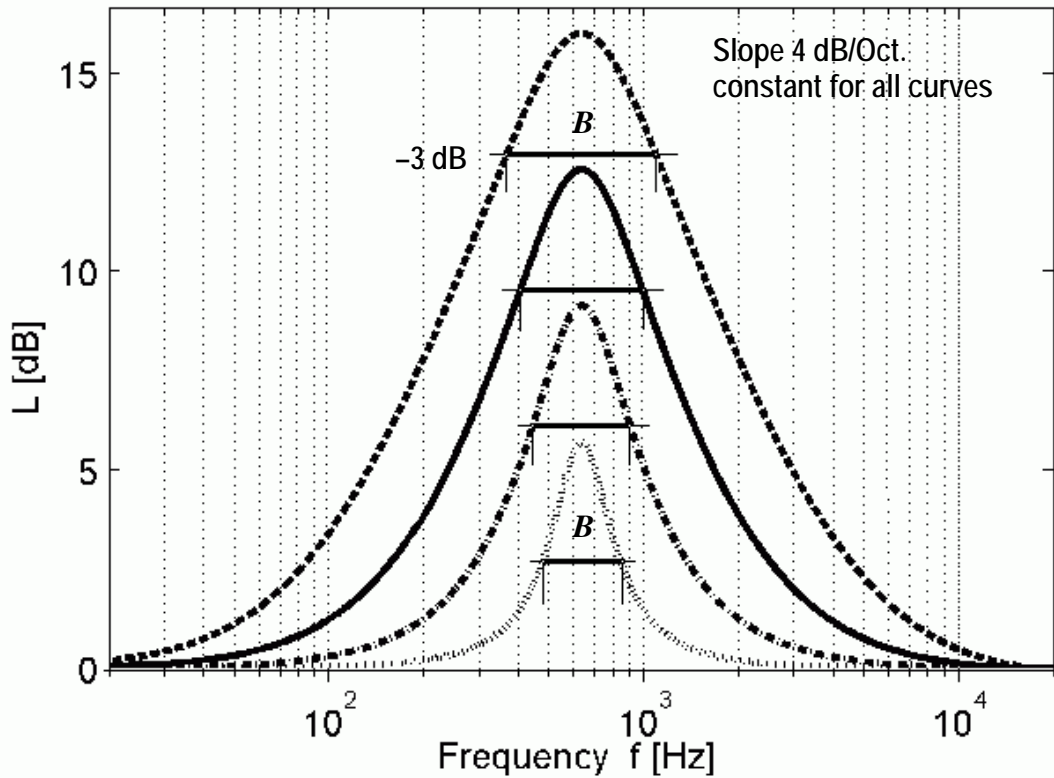




UdK Berlin  
Sengpiel  
10.2006  
Tutorium

# Filter Slope (Steepness) is not Bandwidth

German Version: "Flankensteilheit (Slope) ist nicht Bandbreite": <http://www.sengpielaudio.com/Flankensteilheit.pdf>



With the same slope (steepness) we get a different bandwidth  $BW$  depending on the peak height (gain/amplification). Thus, this is no "replacement" for the indication of the quality factor  $Q$  or the "bandwidth in octaves"  $N$  of the filter setting for this kind of sound-shaping EQ filter.



Mastering equalizer with false information regarding the filter setting as a "slope in dB/octave" instead of the  $Q$  factor (width). There are 5 positions: 6, 9, 12, 15, 18 dB per octave. The number 6 shows a broad and the number 18 a narrow curve. The Avalon EQ AD 2077 indicates as "boost and cut" the slope, in dB / oct. This is strange, because there is no constant dB/oct. value when raising or lowering (gain) of the center frequency.

**Note:** The quality factor or the bandwidth cannot be converted to the slope (steepness) in dB/oct.

For sound shaping presence or absence of filters, which are generated from parallel or serial oscillating circuits, the term of the slope or steepness is wrong. Steepness and filter slope belongs only to the treble or bass performing filters, which are also referred to low-pass or high pass filters.

"Quality factor  $Q$  and bandwidth in octaves": <http://www.sengpielaudio.com/calculator-bandwidth.htm>