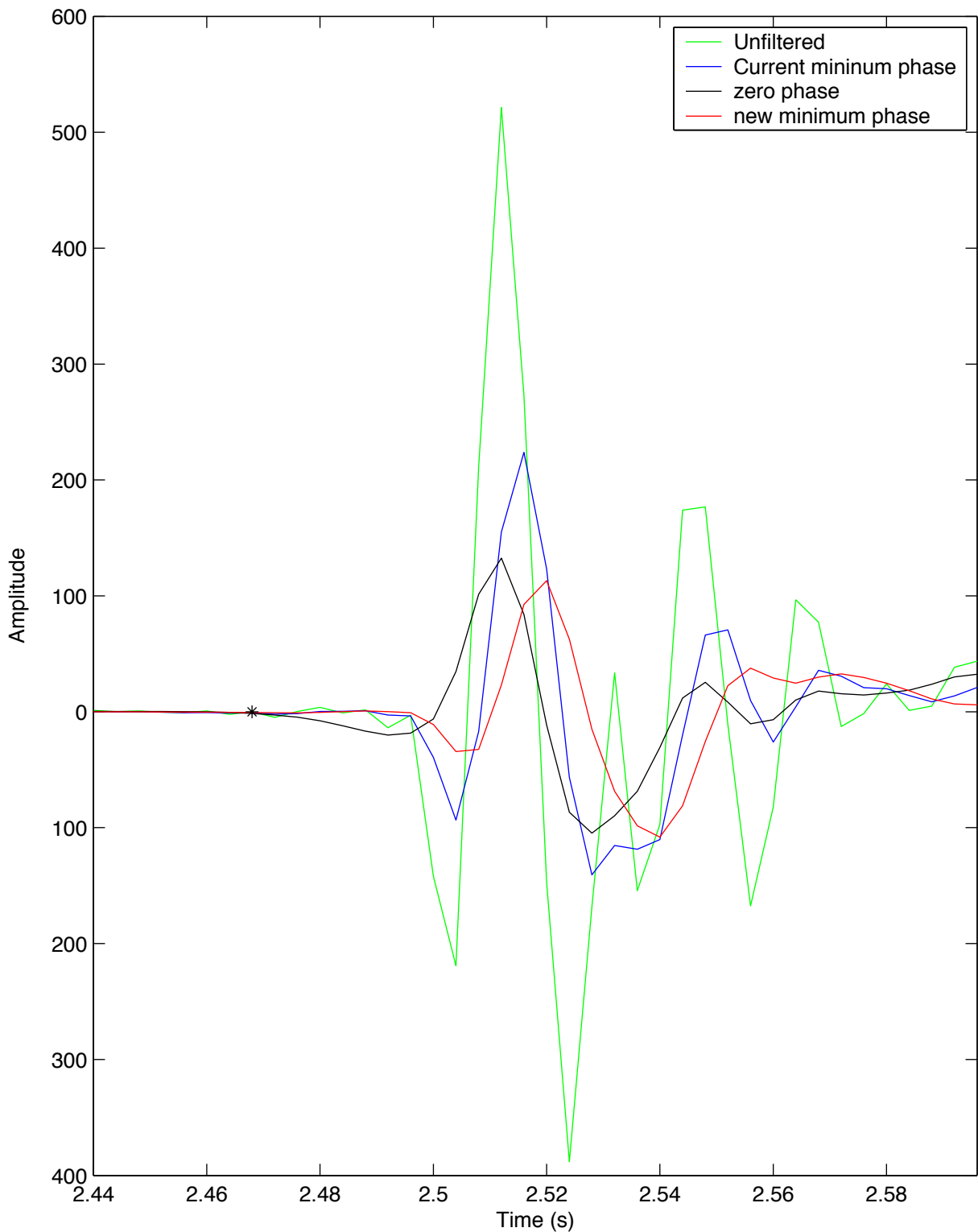


Comparison of Sioseis 5-20 Hz bandpass filters with a 24 dB per octave fall off. The black line is the zero phase filter, while the red line is current (10/03) minimum phase filter. The red line is the minimum phase obtained by squaring the existing minimum phase filter. (db is found by $20\log_{10}(\text{Power spectrum})$)



Comparison of filters on vertical incidence water wave. Green line is the unfiltered data. As before blue line is the existing minimum phase filter, demonstrating that it is causal, and probably minimum phase but with low fall off. The red is the updated minimum phase filter obtained by effectively squaring the existing filter, again it appears to be minimum phase : it has the same frequency content as zero phase filter (black), but is causal with energy front loaded in the wavelet.