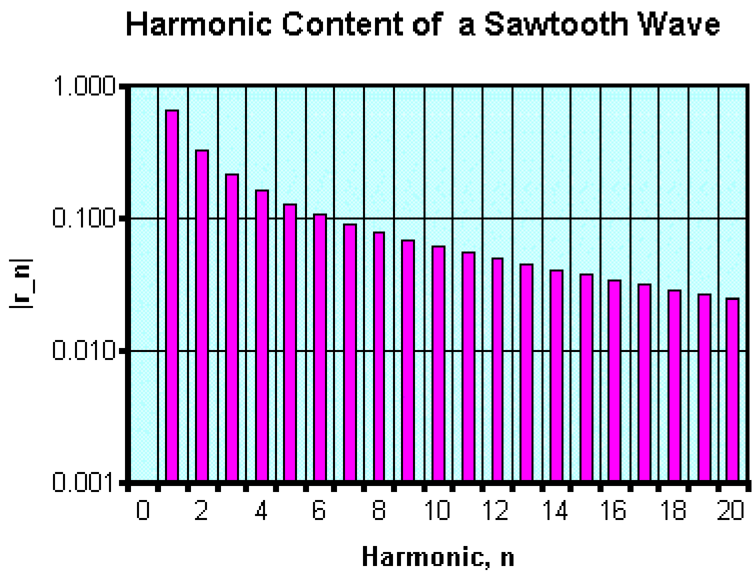
Note that because the picking notes on the guitar strings is done very near the bridge, the harmonics shown in the above figure are all in phase with each other, with phase angles, $\delta_n = tan^{-1}(b_n/a_n) = \pi = 180^o$. This can also be seen in the above figure showing the waveforms of the first six harmonics. If one imagines a vertical line drawn on this plot for the ($\theta_p = 2\pi\alpha_p$)-parameter (representing the peak location of the triangle wave) in the region of $\theta_p \sim 0$, the intersection of this line with each of the harmonics shows that these harmonics are indeed all in phase with each other.

It can be seen that the harmonic amplitudes associated with a sawtooth wave for $\beta_{pick} = 0.02$, for picking guitar strings very close to the bridge, do not decrease with increasing harmonic #, *n* very rapidly, as we anticipated. Compare this result, and the following figure, which shows a semi-log plot of the harmonic amplitudes, with those above, for the triangle wave, with $\beta_{pick} = ½$, and for the sawtooth wave, with $\beta_{pick} = ¼$.



If the harmonic amplitudes, $|r_n|$ for $\beta_{pick} = 0.02$ fall off with increasing harmonic #, *n* as $|r_n| \sim 1/n$, Then the product of $n*|r_n|$ should be close to being a constant value, roughtly independent of the harmonic #, *n*. The following plot shows that for $\beta_{pick} = 0.02$, this is indeed the case, at least approximately so!