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Subject: Re: Intermodulation, phase and Doppler distortion, and then some  
Posted by [Bill Wassilak](#) on Sat, 12 Aug 2006 06:02:01 GMT

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Wayne, I don't agree with the phase shift theory's because you can't hear phase shift unless there's significant time delay's involved, so I don't agree with this: :: a low frequency tone so a higher frequency cone movement must ride upon this shift, which causes a phase shift. At a certain point the higher frequencies depending what they are, are either going to add, subtract or cancel (within the harmonics of the lows, at certain frequencies and x-over points) causing peaks or notches in the overall operating band width of the response. Isn't this modulating (the highs are in style, aka IMD) in a limited bandwidth the response with respect to the lows?? This statement I somewhat agree with:: The other is a non-linearity caused when the driver is pushed nearing or (not really) exceeding  $X_{max}$ , :: where the voice coil has less drive force because it partially "moves out of the gap." (bad news unless you're hitting the bottom plate and/or sliding V.C. back into the front of the gap) This causes it to become non-linear at high drive levels. (TRUE). Don't worry because power compression will set in long before hand which will reduce your output 3-7 db because of voice-coil heating. Even though your amps are at full power and not clipping, so don't boost your lows if you think they're lacking. Time to get off of here, Mr. Seagrams is calling (so I'm maybe full of s\_\_t) Not sure though.

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