Subject: Re: Smoothing Effect on FR of multiple speakers
Posted by Wayne Parham on Tue, 01 Sep 2009 16:07:34 GMT
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I measure drivers individually and then as their sound mixes with others. The reason there is a change in FR is due to acoustic summing, both from the direct sound and the reflected sound. It is a very real and measurable effect, easily seen in the amplitude response. Of course, it can also be seen in the time domain, but we're talking about smoothing the frequency response here.

The whole multisub concept is based on this, however, the phenomenon isn't limited to low frequencies. It's just that at low frequency, the room modes are so far apart as to be noticeable, so the smoothing is really beneficial there. It is dense interference, something that can be useful at times.

Ideally, one would prefer constructive summing, but if that's not possible, then the next best thing is dense interference, which smooths the sound field by making the interactions so complex that the sound field is averaged. What's not so good is interference that causes noticeable peaks and dips at fairly widely spaced intervals, on a scale far enough apart to be easily identified.