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Subject: Re: Mono "flanking sub"

Posted by [Wayne Parham](#) on Wed, 10 Aug 2016 20:01:19 GMT

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When we talk about phase anomalies (time domain) or when we talk about peaks and dips in the amplitude response (frequency domain), we're essentially talking about flip sides of the same coin. I've always been more focused on the frequency domain because I know that anomalies in frequency response are audible, when the peaks or dips are large and wide enough. Anomalies in the time domain are a little more controversial, unless the defects are large enough to cause a time delay between two sounds that were supposed to be simultaneously presented. But again, the two things are really inter-related, and problems in the time domain are presented in the frequency domain, and vice-versa.

Beyond that, see the Pi Speakers FAQ, and especially the sections about Crossovers, Room Effects and Loudspeaker Interactions and Simulations and Measurements. They talk a lot about what is required to get proper summing between adjacent subsystems. This will address what you asked "how important you feel phase is between the drivers in a speaker?" They also talk a lot about room interactions, room modes and the ways to correct the problems that result. That will answer your questions about flanking subs and the frequency range they're used in.

In a nutshell, it is important to get summing right in the statistical range, above 200Hz. This is what you're calling "phase between drivers." We want them to act as a single point source. On the other hand, it is impossible to do this in the modal range, below 200Hz, because of the multiple reflections from each room boundary. Since we can't achieve a point source in the modal region, we want dense interference to smooth the sound field instead.