Subject: Crossover nulls
Posted by Adrian Mack on Sat, 16 Aug 2003 05:37:32 GMT
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Hey Wayne,In the post Baffle spacing, phase angles and time alignment, revisited, you post Linkwitz's method of showing where the out of phase nulls will occur. And on the Pi Speakers example, a = 19degrees or 2a = 38 degrees (arc between nulls). In terms of crossover overlap, we should calculate at these points too. At about 12db attenuation, the driver is just about offline, so should we calculate the nulls at the crossover frequency, and also the point or points (if bandpass filter) where its 12db down?It seems that the closer the center-to-center spacing of the drivers is, the nulls occur as a far greater off axis position, which is a good thing. Using the formula's, a higher crossover frequency puts the null at a less-off-axis position, which we could therefore compensate by placing the drivers closer to each other (such as within 1/4wavelength), and moving the null further off axis. Is this right? BTW: Probably a dumb question, a null is just a major dip, right? I know its crap stuff that we dont want, anyway :P Thanks!

Subject: Re: Crossover nulls
Posted by Wayne Parham on Sat, 16 Aug 2003 06:19:20 GMT
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Right on all counts. That's how it works.

Subject: Re: Crossover nulls
Posted by Adrian Mack on Sat, 16 Aug 2003 06:32:24 GMT
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Hey Wayne,Cool, I guess all this phase stuff isn't so hard after all, I've just spent the afternoon reading posts on this forum, and actually learning what you've said. What would happen on a baffle when the drivers arn't placed exactly above each other? Does the same center-to-center distance apply too? I would think this creates phase issues in the horizontal plane? (unlike when they are orientated one on top of the other, listener-to-driver distance remains constant with all drivers and the listener the same distance). I often see studio monitors etc where the woofer is at the bottom, midrange at the top right, and tweeter at the top left. Thanks!Adrian

Subject: Re: Crossover nulls
Posted by Wayne Parham on Sat, 16 Aug 2003 07:17:35 GMT
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If the drivers aren't exactly one above the other, but are instead offset slightly left or right, then the nulls will form along a diagonal instead of straight above and below the forward axis. A line between the center points defines the direction of the nulls.