Subject: Re: General evaluation of midrange drivers
Posted by Wayne Parham on Sun, 19 Apr 2009 17:04:19 GMT
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I agree with you, 100%. A 40° pattern is useful for prosound, but not for home hifi. I think the best pattern for home sound systems is 90°x40°. That's wide enough to cover the room and yet limited in height to prevent unwanted floor and ceiling reflections.To use a midbass horn like

80°x40° pattern, very close to ideal. Then again, since the horn was designed to work well in freespace, it is probably larger than needed for use in quarterspace or halfspace. That's OK - It's always better with horns to be oversized than undersized, at least where mouth area is concerned. But most people don't want monsterous cabinets for home hifi. It might be worth the

reduction is possible and still obtain the desired response.Regarding push-pull drive, I really like that approach for basshorns but not so much for midrange. I studied distortion reduction

that push-pull drive works best at bass frequencies, and shorting rings work best from midrange frequencies up.Shorting rings work well at frequencies from about 100Hz and higher. They're like transformer windings, and have a lower frequency limit. Push-pull drive is just the opposite, it has an upper frequency limit. The two drivers must be tightly coupled acoustically, so the drivers should be physically close, even better when combined in a common chamber. The coupling is wavelength related, with distance being proportional to wavelength so what's close for a basshorn (where wavelengths are measured in tens of feet) is not so close for a midrange horn (where wavelenths are much shorter). My conclusion is that basshorns are ideally suited for push-pull drive whereas midhorns are better using drivers with shorting rings for flux modulation control.