Subject: Speaker placement software non-rectangular room
Posted by brandon[2] on Fri, 06 Oct 2006 22:37:17 GMT
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hello,

Does anyone know of a software that will calculate where to put your speakers
in a non-rectangular room?
I have seen plenty of softwares that will do that, but not funny shaped rooms.
Anyone? Please.

Thanks You,
Brandon

Subject: Re: Speaker placement software non-rectangular room
Posted by Don Nafe on Fri, 06 Oct 2006 22:56:03 GMT
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Hey Brandon

In my travels I didn't see any but I remember reading (less than a week ago)
in John Sayer's forum a discussion on this exact topic, so I would suggest
heading there.

http://www.johnlsayers.com/phpBB2/index.php?sid=ead168302f76 4825757f16cb1417c80f

Don

"Brandon" <A@A.com> wrote in message news:4526da9d$1@linux...
>
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>
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>
> Thanks You,
> Brandon

Subject: Re: Speaker placement software non-rectangular room

Posted by brandon[2] on Fri, 06 Oct 2006 23:27:09 GMT
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Do you any recolection on what the thread was called?
I cant seem to find it with logical searches.
thanks,
b

"Don Nafe" <dnafe@magma.ca> wrote:
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>
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Subject: Re: Speaker placement software non-rectangular room
Posted by Nil on Fri, 06 Oct 2006 23:28:43 GMT
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"Brandon" <a@a.com> wrote:
>
>Do you any recolection on what the thread was called?
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Then do some illogical searches.

Sheesh!

:)

Subject: Re: Speaker placement software non-rectangular room
Posted by Don Nafe on Fri, 06 Oct 2006 23:39:40 GMT
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I believe it was in Studio Design...first page but check Recording.org - Acoustics forum, it might have been in there as I was all over the place that day

Don

"Brandon" <a@a.com> wrote in message news:4526e64d$1@linux...
>
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Subject: Re: Speaker placement software non-rectangular room
Posted by "Kris" . on Wed, 11 Oct 2006 13:00:29 GMT
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Unfortunately, software to do this would be prohibatively expensive for a single use application. Rectangular rooms have easy analytical (i.e. solved in equation form) solutions for mode distributions, and the early reflections are largely predictable. For non-rectangular rooms, the mode distributions get skewed, and require a kind of finite element brute force mathematical solution.

That said, keep the following things in mind. Low frequencys (sub 400hz) are dominated by room mode effects. High frequencies (above 400hz) are largely directional. If you know the dispersion of your speakers you cn do a pseudo ray-tracing approach by drawing your room (to scale) on a sheet of paper, and drawing rays coming out of your proposed speaker positions. As these rays contact the sides of your room (and ceiling too, remember that your speakers have vertical dispersion too), they are reflected such that the angle of reflecton equals the angle of incidence (just like a billiard ball boucing off the side bumper). Draw the first two reflections for a variety of rays.

Consider that sound travels at approximately 1 foot per milisecond. Ideally, there should be very few reflections that come back to the mix position within the first 20 miliseconds (a good way to help ensure this is to make your rear wall at least 10 feet back from the mix position). Since your drawing is to scale you should be able to measure each ray to see what time it arrives at the mix position. Might be easiest to cut a peice of string to correspond

to whatever length is 20 miliseconds. Sweep the string along the rays starting at each speaker location...if the string bounces back to the mix position, you've identified spots on the wall (and ceiling/floor) that are good candidates for absorbtion.

There's software out there for determining the speaker boundary interface, and that should still be fairly valid for non-rectangular rooms, as its mainly considering adjacent walls as extensions of the speaker baffles.

For room modes, I'd say find the rectangular room that best approximates your room shape and volume, and use that...

Hope this helps.

Cheers,

Kris
"Brandon" <A@A.com> wrote:
>
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