
Subject: Re: Electrical filters and Acoustic Filters
Posted by [Martin](#) on Mon, 19 Sep 2005 15:38:21 GMT
[View Forum Message](#) <> [Reply to Message](#)

Hi Wayne, You wrote : "But consider this. A constant current source amp is one that acts like it has output resistance. A constant voltage amp is one that acts like it has none, or very little. If you have one loudspeaker manufacturer that finds his speakers work very well with tube amps or constant current sources, he is saying his speakers work best with a touch of series resistance. This increases Qes and tends to increase bass and reduce midrange and treble. If you have another loudspeaker manufacturer that says adding a small value of series resistance acts as a sort of compensation circuit when using solid state amps, then the two manufacturers are saying the exact same thing. These are equivalencies." EXACTLY almost. In my opinion, the major difference between SS and tube amps is the presence of series resistance that needs to be accounted for when matching a speaker system. I have been beating this idea to death for years with limited success. So your summary above is very good with one exception, again in my opinion. Series resistance does not change the driver's Qes, it has no impact on the driver's T/S parameters at all. At the speaker input terminals, the driver's impedance is unchanged. What the series resistance does is form a voltage divider so that the amount of signal applied by the amp to the speaker terminals is shaped. Bass output is not increased. Midrange and treble are attenuated. What I like about using SS amps is that I get to determine the amount of series resistance to apply in the design. I get the optimum amount by design. Loss of efficiency is less of a concern because I have adequate power. When you read the AA high efficiency forum, you see many inmates swapping tube amps and cables to get a configuration that mates with their speakers and provides the best balanced response. In my opinion, what they are really doing is swapping series resistance. That is a very expensive way of adjusting series resistance. I believe that the other differences between SS and tube amps are a second order effect when compared to series resistance. Martin
