ACOUSTICS2008/1635 Region of control for low frequency modal equalisation in small listening rooms

Aki Mäkivirta Genelec Oy, Olvitie 5, FIN-74100 Iisalmi, Finland

Small-size listening rooms are characterized by sparse modal density with pronounced spectral colouration when the decay times at low frequencies are large. Various active approaches for reducing the modal decay time have been suggested in the literature. A review of the salient principles of these approaches is given. Active control of the modal decay time at the primary listening position by using the primary radiator for control is demonstrated and evaluated for performance. The locality and size of the region of control, and the amount of control achieved, are studied in light of the experiment. Effect of the modal equalizer filter to the perceived response flatness, audibility of low frequency resonances, and the required amount of modal equalization are discussed in light of the experiment.