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Overview of low frequency control options in rooms

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Low frequency control of modes and speaker boundary interference in rooms has been a persistent problem that affects the sound field in rooms. However, many innovative techniques have been developed to address these problems. This presentation will be an overview of approaches that address the optimization of room dimensions to provide the flattest room response and speaker/listener placement to minimize speaker-boundary interference; the mechanism and design of passive absorption devices based on Helmholtz resonators, diaphragmatic limp mass membranes, plate resonators and microperforated panels will be described and characterized; as well as electro-acoustic approaches, using equalization, active absorbers and the optimal placement of multiple in-phase subwoofers.