

## **ACOUSTICS2008/3403 Experiments with the orchestral impulse response**

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Experiments were conducted in a large multi-purpose performance hall to examine the differences in listening quality and physical acoustical measurements that resulted from using a single dodecahedral loudspeaker as the sound source and an array of multiple directional loudspeakers spread across the stage to simulate the various sections of an orchestra. Significant differences in listening qualities were recorded by listeners at 3 locations in the hall. The impulse responses recorded using the 2 systems varied dramatically in structure and in some of the typical acoustic metrics measured. However, there were also similarities among many measurements using the 2 systems. The research indicates the need for new measurement parameters to express the significant architectural features of the room and the physical acoustical difference that caused the perceived qualities of the sound field to vary. Preliminary analysis of the existing and proposed parameters will be presented.