

PRESENTS

## Chapter 7 Acoustic measures for assessing acoustic conditions on stage

from the PhD thesis by Jens Jørgen Dammerud:

### **Stage Acoustics for Symphony Orchestras in Concert Halls**

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Introduction to Chapter 7:

Normally stage acoustic conditions are investigated by use of an omnidirectional loudspeaker and an omnidirectional microphone to obtain monophonic room impulse responses. The method for obtaining room impulse responses are described in ISO 3382:1997. Based on measured responses, acoustic measures can be calculated (like for instance STearly). For the most valid results, the acoustic conditions assessed should be as close as possible to relevant acoustic conditions. If not, the relevance of obtained acoustic measures is likely to be low when comparing to subjective impressions of the acoustic space assessed. For acoustic conditions within the audience area, the audience seats normally have acoustic properties close to those of a seated audience. This leads ideally to small differences in acoustic conditions within the audience area for an empty compared to a fully occupied hall. On stage, there will be a significant difference in acoustic conditions with a full symphony orchestra, compared to an empty stage, as demonstrated in [Chapter 4](#). For this reason, Halmrast (2000) has proposed measuring the room impulse response on stage with a full symphony orchestra present. Such investigations will often be expensive – most studies of stage acoustic conditions by others have been carried out without an orchestra present.

In this chapter, the consequences of measuring acoustic conditions on stage without an orchestra (or equivalent group of people and/or objects) present are studied. [Go to thesis](#)

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