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Are equations for calculating reverberation time correct? 3

***Abstract***

***Classical statistical equations (Eyring, Sabine) for the calculation of reverberation time is based on an average time of free run of sound τa. Measurements in the computer model by the ray-tracing method in the EASE program, simulating the reverberation process in the rooms, showed that the measured reverberation time T30 differs from the estimates given by these equations. This discrepancy is explained by a mathematical model that deals not only with the mean τa, but also with the variance σ12 of the free run time.***

***Keywords: statistical acoustics, reverberation time, computer modeling, ray-tracing method, the equation Ayring, the equation Sabine.***

***References***

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