Optimal Acoustic Reverberation Evaluation of Byzantine Chanting in Churches

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Byzantine chant is a form of monophonic vocal music characterized by lengthy phrases and by musical scales with intervals smaller than the western music semitones. Byzantine churches present extremely long Reverberation Time and their acoustics is dominated by the contributions of the diffuse sound field. Thus, the sound character of Byzantine chanting is closely linked to the acoustic reverberation. In this work we examine the perceived preference for the various features of reverberation imposed on excerpts of Byzantine chanting. This is achieved by simulations of typical churches with varying internal volume, Reverberation Time and source / receiver distance, utilizing psalms from the DAMASKINOS corpus. The simulation (auralization) results were evaluated via statistical preference method using a group of 15 listeners. The results illustrate the listener preferences and acceptability of various parameters or combinations of parameters related to reverberations, e.g. of the Reverberation Time value in relation to church dimensions and listener position inside the church.

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