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ACOUSTICS AND INTELLIGIBILITY OF THE DIONYSUS ANCIENT GREEK THEATER AT THE ACROPOLIS OF ATHENS

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Abstract

In the ancient theaters, the sources that create the sound field are the speakers (actors), the *ancient dance* members (chorus, dancers, musicians) and the crowd of spectators. Thus, what will be studied is the acoustic behavior of the ancient theater space, mainly, to voice sound signals. The parameter in attention is intelligibility, because, this describes the quality of communication between the main performance factors (i.e. actors, musicians) and the audience. Today, the prediction of articulation indicators may be produced with a series of measurements, without the presence of listeners. The main parameter that is calculated is intelligibility. Actually, an estimate of clarity in the transmission of the audio signal is produced, which is associated to the intelligibility capabilities of the average listener. These elements feed simulation models of the acoustics attributes of space and calculated with the help of computers.

The simulation of the ancient Greek theater via computational models, gives the possibility of studying the associated statistics and in particular using measurements of different source placements in the theater. The results are useful for other research sectors (minus the acoustics) and can be used to extract conclusions with regard to the theatrical practice in the ancient world. This method, together with the study of the resulting comparative elements, allow us for example, to formulate the opinion that the statistics with regard to intelligibility, of the Epidaurus Theater, are much better than that of the Dionysus Theater, for reasons that will be exposed in this presentation.