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Boundary element methods for acoustic simulations in the time domain

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Abstract

This talk discusses recent progress for the time-dependent simulation of sound emission and sound scattering using boundary element methods. We particularly consider methods adapted to complex and singular geometries or short impulses. Stable numerical formulations of the relevant equations are discussed, and they are exploited to compute the sound reflection depending on the absorption and impedance. We discuss the performance of our methods in applications such as tire noise.

Keywords: Time domain boundary elements, Transient sound, Room acoustics

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