13th European
Signal Processing
Conference
September 4-8, 2005
Antalya
Turkey

AN INTEGRATED SYSTEM FOR THE AUTOMATIC BLOCK–WISE SYNTHESIS OF SOUNDS (MonPmOR3)

Author(s) :

Augusto Sarti (Politecnico di Milano, Italy)
Stefano Tubaro (Politecnico di Milano, Italy)
Giovanni De Sanctis (Politecnico di Milano, Italy)
Gabriele Scarparo (Politecnico di Milano, Italy)

Abstract :

Current physics–based synthesis techniques tend to synthesize the interaction between different functional elements of a sound generator by treating it as a single system. However, when dealing with the physical modeling of complex sound generators this choice raises questions about the resulting flexibility of the adopted synthesis strategy. One way to overcome this problem is to approach it by individually synthesizing and discretizing the objects that contribute to the generation of sounds. In this paper we address the problem of how to automate the process of physically modeling the interaction between objects, and how to make this interaction time–varying in its topology. We show how a solution based on binary connection trees can be fruitfully employed in an integrated modeling system that is able to automate the synthesis of interactions between objects. We also show that, with this approach, the modeling of physical interactions can be done in an entirely graphical fashion. We finally provide a description of the Graphical User Interface for a user–friendly authoring of interactional models and an overview of a live performance system based on this technology.

Menu