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(54) Title: **SYSTEM FOR FOURIER TRANSFORM-BASED MODIFICATION OF AUDIO**

(57) Abstract

A system and method for preserving the natural sound of a signal that is processed by an analysis step of converting the signal into a sequence of overlapping windowed DFT representations [202] and a synthesis step of converting these DFT representations back to a time domain signal [214]. For example, the system and method are applicable to analysis-synthesis systems based on a sequence of overlapping windowed, DFT representations in which either: (1) the analysis transforms overlapping time by a different amount than the synthesis transforms, or (2) the modification involves a remapping of transform values from one frequency location to another. The phases of the complex-valued DFT representations may be modified so that synthesis of the time domain signal results in a natural sound [212] despite the effects, of e.g., either (1) or (2).

