

New Spatial Processing Algorithm for Sound Generation

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BACKGROUND

There is a need for enhanced stereo and other sound generating systems for use in a variety of environments including, for example, movie theaters, homes and automobiles. In particular, audience members continue to desire an ever-more intense and realistic entertainment experience. Among the new technologies that have been developed in this regard are sound generating technologies that allow an audience member to hear sounds that appear to be coming from locations outside of the physical environment in which the audience member is situated, e.g., outside a theater. For example, in a movie environment in which an airplane is being displayed on the movie screen, apparently at a location far beyond the physical location of the screen itself, such new technologies can allow an audience member to hear sounds that appear to the audience member as if they had originated from the fictitious, distant airplane rather than from the audio speakers positioned around the theater.

TECHNOLOGY DESCRIPTION

Researchers from UC San Diego have patented a method that represents an advance in the area of accurate spatial processing of sounds. The invention is especially useful in reproducing spatially-significant sounds within a confined area (such as a concert hall, small club, or large arena) without specialized speaker placement.

APPLICATIONS

The patented method can be implemented in a rack mount system for use in live performance to insure accurate reproduction of sound regardless of speaker set up or venue, in home theater systems to optimize sound generation for a given speaker configuration, in surround-sound music composition software, in pro-level audio engineering software and systems for optimal multi-track recording.

RELATED MATERIALS

Yadegari S, [Inner Room Extension of a General Model for Spatial Processing of Sounds](#). Proceedings of International Computer Music Conference. Vol. 2005.

Yadegari S, F. Richard Moore, Harry Castle, Anthony Burr, and Ted Apel. [Real-time implementation of a general model for spatial processing of sounds](#). In Proceedings of International Computer Music Conference, pages 244–247, San Francisco, 2002. ICMA.

Yadegari, S. [Chaotic Signal Synthesis with Real-Time Control: Solving Differential Equations in PD, Max/MSP, and JMax](#). Proc. of the 6th Int. Conference on Digital Audio Effects (DAFx-03), London, UK, September 8-11, 2003

PATENT INFORMATION

U.S. Patent No. 8,515,105 issued on 08/20/2013 hyperlink:

<https://patents.google.com/patent/US8515105B2/>

PATENT STATUS

Country	Type	Number	Dated	Case
United States Of America	Issued Patent	8,515,105	08/20/2013	2007-028

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OTHER INFORMATION

KEYWORDS

music, home theater, audio

engineering

CATEGORIZED AS

- **Computer**
- Hardware
- Other

RELATED CASES

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