



# Sound Visualization and Manipulation

By Yang-Hann Kim, Jung-Woo Choi

Download now

Read Online ➔

**Sound Visualization and Manipulation** By Yang-Hann Kim, Jung-Woo Choi

***Unique in addressing two different problems – sound visualization and manipulation – in a unified way***

Advances in signal processing technology are enabling ever more accurate visualization of existing sound fields and precisely defined sound field production. The idea of explaining both the problem of sound visualization and the problem of the manipulation of sound within one book supports this inter-related area of study. With rapid development of array technologies, it is possible to do much in terms of visualization and manipulation, among other technologies involved with the spatial distribution of sound. This book aims to explore various basic functions for the visualization and manipulation and demonstrate to the reader how these properties determine the quality of visualization and manipulation. The first half of the book introduces some basic and general concepts and theories and the second part of the book explains a number of techniques in sound visualization and manipulation. It offers a unified presentation to two very different topics - sound field visualization techniques based on microphone arrays, and techniques for generation of controlled sound fields using loudspeaker arrays. The authors emphasize the similarities between these two physical problems and between the mathematical methods used for solving them.

With extensive examples throughout the book, chapters include: Acoustic Wave Equation and its Basic Physical Measures, Acoustic Wave Equation and its Basic Physical Measures, Basic Theory of Sound Visualization, Acoustic Holography, Beamforming, Basic Theory of Sound Manipulation, Sound Focusing, and Sound Field Reproduction.

- The first book to combine both the visualization and manipulation of sound technologies in one comprehensive volume
- Presents the basic concepts using simple one dimensional cases and then extends the concept to three dimensional cases, enabling easier understanding of the fundamental concepts through the use of minimum mathematics
- Provides a solid understanding of associated physics as well as mathematical concepts for understanding the technologies, addressing diffraction problems in an integrated format by using Kirchhoff-Helmholtz integral equation

- Uses extensive examples demonstrating the benefits and drawbacks of various applications, including beamforming and acoustic holography

A valuable resource for post/graduate students, acoustic engineers, audio and noise control system developers

 [Download Sound Visualization and Manipulation ...pdf](#)

 [Read Online Sound Visualization and Manipulation ...pdf](#)

# Sound Visualization and Manipulation

*By Yang-Hann Kim, Jung-Woo Choi*

**Sound Visualization and Manipulation** By Yang-Hann Kim, Jung-Woo Choi

*Unique in addressing two different problems – sound visualization and manipulation – in a unified way*

Advances in signal processing technology are enabling ever more accurate visualization of existing sound fields and precisely defined sound field production. The idea of explaining both the problem of sound visualization and the problem of the manipulation of sound within one book supports this inter-related area of study. With rapid development of array technologies, it is possible to do much in terms of visualization and manipulation, among other technologies involved with the spatial distribution of sound. This book aims to explore various basic functions for the visualization and manipulation and demonstrate to the reader how these properties determine the quality of visualization and manipulation. The first half of the book introduces some basic and general concepts and theories and the second part of the book explains a number of techniques in sound visualization and manipulation. It offers a unified presentation to two very different topics - sound field visualization techniques based on microphone arrays, and techniques for generation of controlled sound fields using loudspeaker arrays. The authors emphasize the similarities between these two physical problems and between the mathematical methods used for solving them.

With extensive examples throughout the book, chapters include: Acoustic Wave Equation and its Basic Physical Measures, Acoustic Wave Equation and its Basic Physical Measures, Basic Theory of Sound Visualization, Acoustic Holography, Beamforming, Basic Theory of Sound Manipulation, Sound Focusing, and Sound Field Reproduction.

- The first book to combine both the visualization and manipulation of sound technologies in one comprehensive volume
- Presents the basic concepts using simple one dimensional cases and then extends the concept to three dimensional cases, enabling easier understanding of the fundamental concepts through the use of minimum mathematics
- Provides a solid understanding of associated physics as well as mathematical concepts for understanding the technologies, addressing diffraction problems in an integrated format by using Kirchhoff-Helmholtz integral equation
- Uses extensive examples demonstrating the benefits and drawbacks of various applications, including beamforming and acoustic holography

A valuable resource for post/graduate students, acoustic engineers, audio and noise control system developers

**Sound Visualization and Manipulation** By Yang-Hann Kim, Jung-Woo Choi Bibliography

- Sales Rank: #4369221 in Books
- Published on: 2013-12-09
- Original language: English
- Number of items: 1

- Dimensions: 9.70" h x 1.10" w x 6.90" l, .0 pounds
- Binding: Hardcover
- 400 pages

 [Download Sound Visualization and Manipulation ...pdf](#)

 [Read Online Sound Visualization and Manipulation ...pdf](#)

## **Editorial Review**

### **Users Review**

#### **From reader reviews:**

##### **Douglas Barney:**

Book is to be different per grade. Book for children until adult are different content. As you may know that book is very important for people. The book Sound Visualization and Manipulation ended up being making you to know about other know-how and of course you can take more information. It is quite advantages for you. The publication Sound Visualization and Manipulation is not only giving you more new information but also to become your friend when you truly feel bored. You can spend your own personal spend time to read your reserve. Try to make relationship using the book Sound Visualization and Manipulation. You never feel lose out for everything in case you read some books.

##### **Raymond Floyd:**

In this 21st millennium, people become competitive in each and every way. By being competitive right now, people have do something to make these survives, being in the middle of typically the crowded place and notice simply by surrounding. One thing that oftentimes many people have underestimated it for a while is reading. Yep, by reading a book your ability to survive raise then having chance to stand up than other is high. In your case who want to start reading a new book, we give you this kind of Sound Visualization and Manipulation book as nice and daily reading reserve. Why, because this book is more than just a book.

##### **Lynda Alford:**

In this time globalization it is important to someone to find information. The information will make someone to understand the condition of the world. The condition of the world makes the information quicker to share. You can find a lot of references to get information example: internet, newspapers, book, and soon. You can view that now, a lot of publisher that will print many kinds of book. The particular book that recommended for you is Sound Visualization and Manipulation this guide consist a lot of the information from the condition of this world now. This book was represented how does the world has grown up. The language styles that writer make usage of to explain it is easy to understand. The writer made some research when he makes this book. That is why this book suited all of you.

##### **Richard Ault:**

Don't be worry when you are afraid that this book can filled the space in your house, you will get it in e-book means, more simple and reachable. This kind of Sound Visualization and Manipulation can give you a lot of friends because by you checking out this one book you have issue that they don't and make anyone more like

an interesting person. That book can be one of a step for you to get success. This book offer you information that probably your friend doesn't realize, by knowing more than other make you to be great folks. So , why hesitate? Let us have Sound Visualization and Manipulation.

**Download and Read Online Sound Visualization and Manipulation  
By Yang-Hann Kim, Jung-Woo Choi #USXG3DMAKN5**

## **Read Sound Visualization and Manipulation By Yang-Hann Kim, Jung-Woo Choi for online ebook**

Sound Visualization and Manipulation By Yang-Hann Kim, Jung-Woo Choi Free PDF d0wnl0ad, audio books, books to read, good books to read, cheap books, good books, online books, books online, book reviews epub, read books online, books to read online, online library, greatbooks to read, PDF best books to read, top books to read Sound Visualization and Manipulation By Yang-Hann Kim, Jung-Woo Choi books to read online.

### **Online Sound Visualization and Manipulation By Yang-Hann Kim, Jung-Woo Choi ebook PDF download**

**Sound Visualization and Manipulation By Yang-Hann Kim, Jung-Woo Choi Doc**

**Sound Visualization and Manipulation By Yang-Hann Kim, Jung-Woo Choi Mobipocket**

**Sound Visualization and Manipulation By Yang-Hann Kim, Jung-Woo Choi EPub**

**USXG3DMAKN5: Sound Visualization and Manipulation By Yang-Hann Kim, Jung-Woo Choi**