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Development of Sound Tactile Interface by Use of Human Sensation of Stiffness

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Abstract : There are very few sound interfaces that both healthy people and hearing handicapped people can use to play together. In this study, we developed a sound tactile interface that makes use of the human sensation of stiffness. The interface comprises eight elastic objects having varying degrees of stiffness. Each elastic object is shaped like a column. When people with and without hearing disabilities press each elastic object, different sounds are produced depending on the stiffness of the elastic object. The types of sounds used were “Do Re Mi sounds.” The interface has a major advantage in that people with or without hearing disabilities can play with it. We found that users were able to recognize the hardness sensation and relate it to the corresponding Do Re Mi sounds.

Keywords : tactile sense, sound interface, stiffness perception, elastic object
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