

## **Multiplayer Game System for Therapeutic Exercise in Which Players with Different Athletic Abilities Can Participate on an Even Competitive Footing**

**Authors :** Kazumoto Tanaka, Takayuki Fujino

**Abstract :** Sports games conducted as a group are a form of therapeutic exercise for aged people with decreased strength and for people suffering from permanent damage of stroke and other conditions. However, it is difficult for patients with different athletic abilities to play a game on an equal footing. This study specifically examines a computer video game designed for therapeutic exercise, and a game system with support given depending on athletic ability. Thereby, anyone playing the game can participate equally. This video-game, to be specific, is a popular variant of balloon volleyball, in which players hit a balloon by hand before it falls to the floor. In this game system, each player plays the game watching a monitor on which the system displays tailor-made video-game images adjusted to the person's athletic ability, providing players with player-adaptive assist support. We have developed a multiplayer game system with an image generation technique for the tailor-made video-game and conducted tests to evaluate it.

**Keywords :** therapeutic exercise, computer video game, disability-adaptive assist, tailor-made video-game image

**Conference Title :** ICGAE 2015 : International Conference on Game and Amusement Exhibition

**Conference Location :** Singapore, Singapore

**Conference Dates :** January 08-09, 2015