

## Feeling conversation in motion

~ Recreating a conversation space with augmented body motions ~

## Abstract

Heading toward the communication environments of the future, we have been exploring the mechanism of human-to-human communications. In particular, we are focusing on the nonverbal behaviors of conversation participants, which can be expressed by head and body motions. Here we exhibit our demonstration system called MM+Space; it uses mechanically augmented nonverbal behaviors to recreate multiparty conversation scenes. This system simultaneously provides videoprojected human faces and physical head motions, i.e. rotations in nodding and shaking directions and left-right/forward-backward translations, which are synchronized with actual human motions. This enhanced expression modality allows viewers to feel more clearly the bodily motions and the telepresence of remote conversation participants.



of screen panels process conversation scene [mm] 40 Sound actuator 20 Rotation mechanism Trajectory of head center Capturing meeting scene with -40 on ground plane cameras, microphones, and sensors -40 -20 Ó 20 40 [mm] Translation Improved expression of pose and the sense of presence, nechanism Benefits compared with old system with 2-DoF head rotations of proposed Potential for rich emotional expression, involvement in system

conversions, and behavioral contagion

Related work

[1] K. Otsuka, S. Kumano, R. Ishii, M. Zbogar, J. Yamato, "MM+Space: n × 4 degree-of-freedom kinetic display for recreating multiparty conversation spaces," in Proc. ACM International Conference on Multimodal Interfaces (ICMI), 2013 [2] K. Otsuka, S. Kumano, M. Matsuda, J. Yamato, "MM-Space: re-creating multiparty conversation space based on physically augmented head motion," IPSJ Journal, Vol. 54, No. 4, pp. 1450-1461, 2013 (In Japanese)

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