

experiment results of long-range time reversal communication in deep water.

In our research program, a project to develop a long cruising autonomous underwater vehicle (AUV) is planned. Researches to realize communication with such AUV using time reversal have been conducted. By time reversal, multipath waves are converged so that signal-to-noise ratio (SNR) is improved and intersymbol interferences (ISI) are removed. Recently, communication at data rates of 100 and 400 bps at the range of 1000 and 600 km, respectively, in deep water were performed. Additionally, at-sea experiments for multiuser communication by time reversal under Doppler effect due to source movement were demonstrated. Results of such experiments are described in this paper.

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