

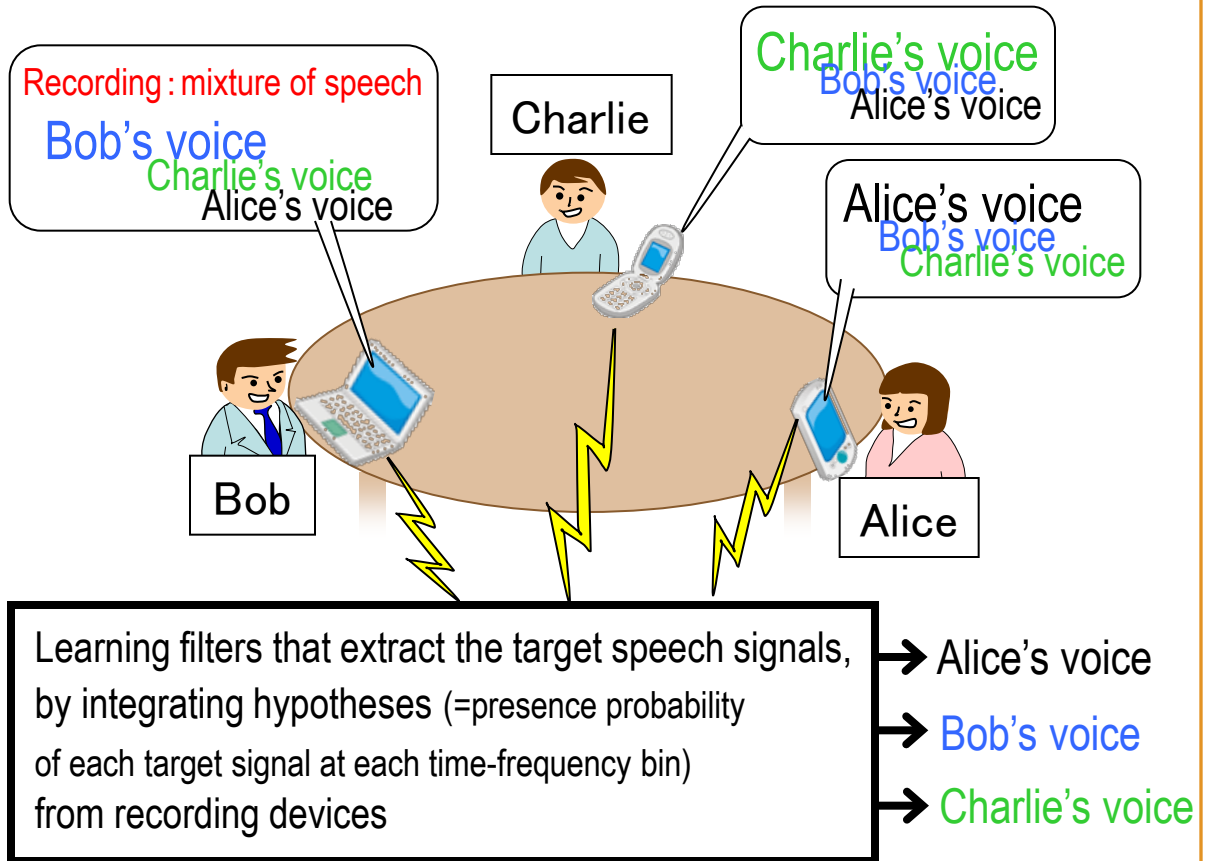


## Speech separation with collaborative recorders

### Probabilistic fusion of different recording devices

**Abstract—** When we capture speech signals in actual environments such as the meeting scenario depicted below, the recorded signal inevitably contains an interference signal (i.e., speech from non-target speakers, ambient noise) that overlaps the target speech signal. Although many multi-channel speech separation techniques have been proposed in previous decades, they tend to fail in distributed microphone scenarios owing to the different characteristics of different recording devices (i.e., the sampling frequency mismatch between devices). In this presentation, we introduce speech separation techniques that can work in distributed microphone scenarios by fusing hypotheses from different recording devices in a probabilistic manner and making recording devices work collaboratively.

Problem: If we record speech with IC recorders/computers, interference often recorded along with the target signals ☹️



**Solution: Extracting target speech signals by using collaborative recording devices**

#### Related works

[1] M. Souden, K. Kinoshita, T. Nakatani, "An integration of source location cues for speech clustering in distributed microphone arrays," in *Proc. International Conference on Acoustic, Speech and Signal Processing (ICASSP)*, 2013.

[2] M. Souden, K. Kinoshita, T. Nakatani, "Blind source separation with distributed microphone array based on the joint utilization of intra- and inter-node information," in *Proc. Acoustical Society of Japan (Spring meeting)*, pp. 797-798, 2013 (in japanese).

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