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Speaker Diarization using Low-cost Wearable Wireless Sensors

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Abstract: This paper presents speaker diarization using low cost wearable wireless sensors. A prototype Wireless Body Area Network (WBAN) has been constructed for experimentally acoustic diarization for human interaction monitoring in the presence of low acoustic data sampling frequency, noise and altered distance. The key idea is to collect the acoustic-modal sensor data from strategically placed wireless sensors over a human subject's body, and to process that using ACD in order to identify the instantaneous speaker. Through experiments, with body mounted sensors, it is demonstrated that the proposed system, Acoustic Comparator based Diarization (ACD), can be used for effective acoustic diarization with high precision. Controlled experiments using human subjects were carried out for evaluating the performance of ACD acoustic diarization.