
**Abstract**

The performance of systems for speaker identification (SID) is excellent with clean speech, though much worse with degraded and/or noisy speech such as telephone speech. In previous experiments, we have seen improved SID performance by measuring formant AM-FM parameters and glottal parameters. This paper investigates the importance of features from previous systems using three methods: more carefully considering the signal processing algorithms used, devising possible acoustic-phonetic sources of features, and developing statistical tools for automatically assigning relative weights to features. We hope that by identifying and directly measuring important features, SID performance can be improved even further.