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**Abstract**

We present a comparison between speaker verification systems based on factor analysis modeling and support vector machines using GMM supervectors as features. All systems used the same acoustic features and they were trained and tested on the same data sets. We test two types of kernel (one linear, the other non-linear) for the GMM support vector machines. The results show that factor analysis using speaker factors gives the best results on the core condition of the NIST 2006 speaker recognition evaluation. The difference is particularly marked on the English language subset. Fusion of all systems gave an equal error rate of 4.2% (all trials) and 3.2% (English trials only).