Overcomplete Blind Source Separation by Combining ICA and Binary Time-Frequency Masking - DTU Orbit (12/11/2018)

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A limitation in many source separation tasks is that the number of source signals has to be known in advance. Further, in order to achieve good performance, the number of sources cannot exceed the number of sensors. In many real-world applications these limitations are too strict. We propose a novel method for over-complete blind source separation. Two powerful source separation techniques have been combined, independent component analysis and binary time-frequency masking. Hereby, it is possible to iteratively extract each speech signal from the mixture. By using merely two microphones we can separate up to six mixed speech signals under anechoic conditions. The number of source signals is not assumed to be known in advance. It is also possible to maintain the extracted signals as stereo signals.