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**Spectral-subtraction speech enhancement in multirate systems with and without non-uniform and adaptive bandwidths.** (English) [Zbl 1144.94337](#)

Signal Process. 83, No. 8, 1613-1631 (2003).

Summary: The method of spectral subtraction is widely used for single-channel speech enhancement, if the speech signal is corrupted by additive noise. It is based on the manipulation of the magnitude of the noisy-speech spectrum. Most realizations use fixed, uniformly-spaced frequency transformations or, equivalently, filter banks with identical sampling rates in each frequency band. In this paper, we generalize the basic structure: Different filter-bank systems with non-uniform and, especially, non-constant, signal-adaptive spectral resolutions and, therefore, different sampling rates are examined. An efficient realization of a time-varying band allocation is proposed. The arising problems are discussed and the enhancement results are compared to each other and to those obtained with uniform spectral transformations.

**MSC:**

[94A12](#) Signal theory (characterization, reconstruction, filtering, etc.)

[93E11](#) Filtering in stochastic control theory

Cited in **3** Documents

**Keywords:**

noise reduction; spectral subtraction; filterbanks; adaptive bandwidths

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