

## Documents

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**Cepstral removal of periodic spectral components from time signals**

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**Abstract**

The use of the cepstrum for removing components from a signal which manifest themselves as periodic spectral components has previously been described. These include discrete frequency components with uniform spacing such as families of harmonics and modulation sidebands, but also narrow band noise peaks coming from slight random modulation of almost periodic signals, such as higher harmonics of blade pass frequencies. The removal is effected by applying a notch "lifter" to the real cepstrum of the signal, thus removing the targeted components from the log amplitude spectrum, and then combining the modified amplitude spectrum with the original phase spectrum. Not much attention was previously paid to the type of notch lifter, but two different situations occurring in conjunction with analysis of signals from wind turbines showed that different lifters have advantages in different situations. This chapter describes two different approaches, illustrating them with the two examples of application. © Springer-Verlag Berlin Heidelberg 2014.

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