



## ESTIMATION OF CARDIAC AND RESPIRATORY RHYTHMS BASED ON AN AMFM DEMODULATION AND AN ADAPTIVE EIGENVECTOR DECOMPOSITION (MonAmOR11)

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★ Abstract :

In a context of sleep researches, we need to estimate cardiac and respiratory rhythms on 20-second epochs of a signal giving the variations in radial arterial pressure. This signal is amplitude and frequency modulated by cardiac and respiratory contributions. The technique we developed combines an amplitude and frequency (AMFM) demodulation using The Teager energy operator and an adaptive eigenvector decomposition. The interest of the method lies in its independence from artefacts obtained for reasonable calculation and memory costs. Experimental results indicate a close correspondence between estimated and reference values both for cardiac and respiratory rhythms.

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