

## ABSTRACT

There were many research focuses on respiration system. And much method was use as standards. Inductive plethysmography, impedance pneumography, fiber optic humidication, and stream capnography are mostly popular. However the research is focuses on respiration rate (RR). RR was known as important thing that can be use as indicator of respiration disease.

In this paper, RR detection is determined by finding the envelope of the input signal. It is use for make a simple process to known inspiration and expiration phase. Maximum peaks of the envelope will represent the phase. The envelope is auto correlated to get ratio inspiration – expiration and RR value.

Result shows that autocorrelation method can be use to find RR and ratio value of respiration sound from recorded lung sounds. Result shows that vesicular sounds detection have 100% accuracy, bronchial sounds detection have 83.33% accuracy. Normal RR detection are 12 – 20 cycles per minute, ratio detection for normal bronchial 1:2, for normal vesicular are  $\cong 1$ .

***Keywords : respiration rate, respiration ratio, lung sound, envelope detection.***

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