

Artificial lung ventilation fails in approximately 40 % of cases where patient suffer from ARDS (Acute Respiratory Distress Syndrome). This fact is given both by non-physiological matter of artificial lung ventilation and also by improper ventilation mode. Actual values of mechanical parameters of the respiratory system can be used for determine stability of ventilation mode and for diagnosis of respiratory failure. This study deals with design and verification of non-linear one compartment model of the respiratory system for evaluating mechanical parameters of the respiratory system in real-time.