TOTAL RESPIRATORY IMPEDANCE ANALYSIS USING LADDER NETWORKS ANALOGY FOR FRACTIONAL-ORDER MODELS

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Abstract: *Fractional-order parametric models are popular in applications in material sciences, but they are not applied to biological systems. Recent research showed that they seem a good choice to model the human respiratory impedance. The purpose of this contribution is to implement such a fractional-order model for the human impedance, with electrical ladder networks of integer-order. The conclusion is that the number of rungs is an important design parameter to obtain a good approximation.*

Key words: *fractional-order models, integer-order models, frequency-domain analysis, distributed models, respiratory system impedance.*

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