

A Dynamical Study of Fractional Order Obesity Model by a Combined Legendre Wavelet Method

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Abstract : In this paper, we propose a new compartmental fractional order model for the simulation of epidemic obesity dynamics. Using the Legendre wavelet method combined with the decoupling and quasi-linearization technique, we demonstrate the validity and applicability of our model. We also present some fractional differential illustrative examples to demonstrate the applicability and efficiency of the method. The fractional derivative is described in the Caputo sense.

Keywords : Caputo derivative, epidemiology, Legendre wavelet method, obesity

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