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Title: Application of Parameters Estimation Technique in Dengue

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Abstract: In this work we describe an investigation of biological parameters of dengue mosquito by applying the parameters estimation technique. This technique was applied to estimate a set of unknown parameters of a nonlinear model of dengue that describes the dynamics of mosquitoes in water and winged phases, and a single serotype of dengue. The *Levenberg-Marquardt* (*LM*) algorithm was explored to minimize the cost function to fit the model to the dengue data available and taking into account the parameters estimated. Numerical simulations have been performed. The numerical results showed the robustness of *LM* in estimating of the important parameters of dengue mosquito populations.