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Stability analysis for the dynamics of a model of amyloid fibril formation in pancreatic islet beta cells

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Abstract. In this project, we investigate the stability of a model describing the dynamics of amyloid formation of islet beta cells which is the cause of diabetes mellitus type II. The model consists of a system of nonlinear differential equations portraying the development of human islet amyloid polypeptide under the effects of therapeutic interventions in type 2 diabetes. Numerical simulations are systematically performed to capture the asymptotic features of the model.

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