

## The Effect of Delay in a Brain Tumor Model

**Abstract:** Tumors are the second leading cause of death in the world. A mathematical model can provide a suitable context for understanding tumor growth dynamics, treatment strategies and interactions with the immune system. In this project, we try to understand brain tumor growth models including system of differential equations. Later, incorporating delay term representing the effect of chemotherapy drugs or brain metastases it is aimed to obtain a new delay differential equation system. Subsequently, the stability properties of the proposed system will be analyzed using the techniques in nonlinear dynamics.