On the solutions and conservation laws of the model for tumor growth in the brain

A.H. Bokhari[1], A.H. Kara[2], F.D. Zaman [2]

1. Department of Mathematics and Statistics, King Fahd University of Petroleum and Minerals, Dhahran 31261, Saudi Arabia

2. School of Mathematics and Centre for Differential Equations, Continuum Mechanics and Applications, University of the Witwatersrand, Wits 2050, Johannesburg, South Africa

ABSTRACT

We study the problem of tumor growth and its monitoring ranging from the simple model for the radially symmetric to the more complex case being the radially non-symmetric one. In each case, we take killing rate of the cancer cells dependent on the concentration of the cells. Using the idea of Lie symmetry analysis, solve the model equation to find certain exact solutions. We also study certain conservation laws for the model.