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APPLICATION OF EULAR METHOD TO COMPLETE DIFFERENTIAL EQUATION IN MAGNETIC MEDICINE SIMULATION

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ABSTRACT

Along with technological developments, the study of magnetic nanoparticles was a concern to scientists and engineers. One of the most widely synthesized types of nanoparticles was the nanoparticles used in medicine because it had magnetic properties, which were properties that could be drawn by the magnetic field and it was this character that useful for human life in various fields.

The research for solves differential equations by using Euler method with Matlab simulation program to simulate the movement of drugs human body. From the simulation, we have the results of the data that shows the velocity of drug particles depends on time due to the influence of a strong magnetic field. The duration takes for the particles to find the magnetic field is 40 seconds. We divide final position of the particle distribution with 20 classes. Distribution of particles in the interval -0,3 to -0,1 have the smallest percentage of the particle distribution is 0,3% and the particles in the interval of 0,6 to 0,8 have the largest percentage is 2,2%. By using the exponential function approach to predict the average velocity it is concluded that the function f(t) = A exp (-kt), with the value of function A = 1 and k = 0,8 the closest.

***KEYWORDS**: Magnetic Nanoparticles, Euler Methods, Magnetic Field, and Particle Distribution*