

ABSTRACT

The measurement of spacecraft's position travelling in deep space has been challenged to be precise. Radio ranging measurement methods has been combined with numerical calculations or simulations for precise measurements. In the study, the genetic algorithm (GA) is used to predict the position of spacecraft or satellite travelling in lunar trajectory and hence simulations use doppler shift calculations. In fact, the accuracy of spacecraft position depends on the combination of GA parameters. In this work the optimization process is carried out using genetic algorithms (GAs). The mathematical models are described for orbit determination. Characteristics and performance of different GA combination are analyzed. Many simulations are carried out to approach the desired accuracy.