There is a strong need for an optimized management of the accuracy verification of LADAR, it is necessary to assess the data quality and to develop data processing algorithms. However, the accuracy verification of LADAR system is difficult, because we cannot know the accurate reflected positions of the returned signals at target's surface. Under the consideration of this difficulty, the verification based on LADAR simulation can be a more feasible alternative solution. In this paper, a new optimization algorithm called Bacterial Foraging Optimization Algorithm (BFOA) is proposed for simulation&Optimization of the received signal. A BFOA discloses a simulation method which delivers the performance of the power detection in more economical ways.