Abstract

The evolution of a geometric form can be generated by its curvature. The changing curvature is a displacement of its points and it is called as Mean Curvature Motion (MCM). MCM has been studied in depth to solve one of Jordan's curves in physical modeling. In this paper, the MCM solution is approximated by using a finite difference scheme and simulated into OpenMP parallel. To compute the parallel performance, 10 n_{iter} times simulations are elaborated using 2, 4, and 8 threads. From the numerical simulations, the results show that parallel performance is obtained has a lower computation time than the serial. In addition, the average efficiency of parallel code using 2 threads are observed higher than using 4 and 8 threads. For example on the size of n_{iter} 50000, the time speed of 2, 4, and 8 threads are 180.422 s, 156.002 s, and 333.243 s respectively. Moreover, the efficiency using 2, 4, and 8 threads are found 113%, 66%, and 34,8% respectively.

Keywords: Finite Difference Schemes, Curvature Motion Model, Parallel.